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Original Articles

THE INFLUENCE OF FOOD AND OF EPITHELIAL ATROPHY ON THE MANIFESTATATIONS OF SACCHARO-BUTYRIC INTESTINAL PUTREFACTION.

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In recent publications I have sought to establish the significance of the part played by anaërobic butyric-acid forming bacteria in chronic intestinal disorders and have advanced evidence to show that of these anaërobes, the *Bacillus aerogenes capsulatus,* or "gas bacillus," is the most important both on account of the frequency with which it is concerned and because of the intensity of its fermentative and putrefactive activities.[1] In assigning this place to the gas bacillus, I have not failed to recognize that other closely related, highly anaërobic bacteria, such as the bacillus of malignant edema and the *Bacillus putrificus* of Bienstock, are often associated with it. There are, in addition to these anaërobes, some butyric-acid forming aërobic bacteria which may thrive in the stomach and mouth, but there is no indication that in man they multiply abundantly in the large intestine, or in the small intestine, or that they are even moderately pathogenic for man. In some animals, as, for example, goats and pigs, large quantities of butyric acid are formed in the stomach by aërobic butyric-acid-forming bacteria taken in with the food and it appears likely that in them butyric acid is of importance in its relation to nutrition. These organisms, in fact, appear to be significant physiologically rather than pathologically, although we can not say that the continued persistence of a butyric-acid type of decomposition of great intensity may not exert some detrimental influence on the duration of life.

The human condition which I have described as one of saccharo-butyric putrefaction[2] is characterized by the persistent presence of excessive numbers of anaërobic butyric-acid makers in the large intestine and probably also in the small intestine. In fact, the persistent occurrence of this form of putrefaction is an indication of an intestinal infection through the agency of anaërobes.

CHIEF CHARACTERISTICS OF THE SACCHARO-BUTYRIC TYPE OF INTESTINAL PUTREFACTION.

It is desirable for the purpose of the present paper to describe briefly the leading features of the saccharo-butyric type of intestinal putrefaction. The process in question is a chronic one. There are acute conditions in which there is a temporary increase of anaërobic butyric-acid makers, but in young individuals this condition is commonly of short duration—a few days or a few weeks—and is mainly of interest here as a forerunner of the more chronic type of infection. In chronic infection, the anaërobes have become adapted, at least partially, to the mucous membrane and its secretions. This is especially true of the large intestine where the putrefactive anaërobes may persist in very large numbers. The excessive numbers of anaërobic butyric-acid formers are readily demonstrable in the case of *B. aerogenes capsulatus* by (1) the large numbers of characteristic Gram-positive bacilli seen in the fecal fields; (2) the growth of characteristic colonies on anaërobic blood-agar plates with or without sugar; (3) the intravenous injection of fecal emulsions into rabbits incubated by the Welch-Nuttall method; (4) the subcutaneous or intramuscular injection of fecal emulsions into guinea-pigs, with the production of hemorrhagic edema at a distance as well as locally and by the spread of the bacilli (usually in pure culture) throughout the blood.[3]

How far into the ileum the organisms establish themselves in significant numbers is not yet clear. While they are continually present in the large intestine in excessive numbers, it is probable that in many cases their presence in the small intestine is less constant and that the upper level of the small intestine to which they attain is variable, depending on the state of the secretion of the digested juices, on the character of the food and on the state of the epithelium of the intestinal tract. In one instance, I have obtained experimental evidence of the upward wandering of the *B. aerogenes capsulatus* to a level at least as high as the middle of the small intestine. This was in a dog in which Dr. Carrel had resected the pancreatic and biliary ducts. There was, however, in this case an acute gastroenteritis, apparently induced by an experiment in diet (which will be referred to later). A comparison with other animals shows that exclusion of the bile and pancreatic juice is not necessarily followed by this upward wandering of the *B. aerogenes capsulatus*, but that this is likely to occur under certain pathologic conditions. In human beings with chronic anaërobic infections, there is usually a diminution in the numbers of colon bacilli in the feces—perhaps even a complete disappearance—which probably points to a diminution of these organisms at higher levels. If the chronic infection has been of only short duration, the colon bacilli may still be well represented, and, indeed, this is the case in some infections of many years' standing.

1. Bacterial Processes in the Intestinal Tract in Some Cases of Advanced Anemia, with Especial Reference to Infection with *B. Aërogenes capsulatus* (*B. Welchii*), Jour. Biol. Chem., II, p. 1, August, 1906; see also Common Bacterial Infections of the Digestive Tract and the Intoxication Arising From Them, The Macmillan Company, 1907.

2. I use the term putrefaction rather than fermentaton to indicate that butyric acid is formed from protein as well as from sugar and because the most harmful products are those derived from protein; at the same time the adjective "saccharo-butyric" is a reminder that butyric acid is formed from sugar.

3. I expect soon to publish exact data regarding the virulence of the heated and unheated fecal suspensions from a series of cases, as I believe the virulence of *B. aerogenes capsulatus* (in the human tract) varies almost as much as its numbers.

In the saccharo-butyric type of intestinal putrefaction, there is an excessive production of butyric acid on an ordinary mixed diet. The amount of butyric acid recoverable in the feces depends in part on the proportion of acid that has been absorbed and is, therefore, greater, the conditions of diet remaining the same, when there is an increase in peristalsis from any cause, or when the epithelium has been temporarily or permanently denuded. It is usual in the saccharo-butyric type of putrefaction for the feces to have the odor of butyric acid, owing to the presence of a small amount of the free acid. This is especially noticeable on a diet rich in carbohydrates, but if the diet consists largely of meat the acid is neutralized wholly by ammonia or ammonia and other bases, and the odor of butyric acid is not pronounced. The quantity of butyric acid in one hundred grams of dried feces may reach 0.5 grams in well-pronounced examples of this type of decomposition. The formation of butyric acid from carbohydrates is attended by the liberation of hydrogen, carbon dioxid and methane, and this gas production accounts for the intestinal flatulence which is so persistent a feature in marked instances of the affection. The quantity of hydrogen sulphid produced is small and in several instances the quantity of hydrogen sulphid bound by the proteids of the feces has not been in excess of that observed in normal persons on a similar diet.

Often the expelled gases have a sickening odor, exactly like that which emanates from a rabbit that has been injected with a pure culture of *B. aerogenes capsulatus* and then incubated. The presence of gas gives a light color to the movements which are often unformed and soft and float on water. Through the active reducing agency of the putrefactive anaërobes there is a conversion of bilirubin into hydrobilirubin, the presence of which may be inferred from the pink or red color developed on the addition of a saturated solution of mercuric chlorid. This reaction is frequently intense. It fails, however, in those conditions in which the bile is excluded from the intestinal tract.

Another unusual reaction, dependent on some modified form of bile pigment (perhaps urobilinogen) is that which is manifested when an acid solution of dimethylamidobenzaldehyd is added to the filtrate prepared from a fecal suspension. The intense cherry-red color so obtained is like that yielded by indol. Hence in order to determine whether the reaction is due to urobilinogen it is necessary first to remove by distillation any indol which may be present. It is very common to find indol in the intestinal contents of persons suffering from chronic saccharo-butyric putrefaction, but the quantity may be small, and I have met with instances in which the feces contained a great excess of anaërobes, chiefly *B. aerogenes capsulatus,* but from which only traces of indol could be recovered, while the urine on repeated examination failed to contain indican.

I consider that two conditions have to be fulfilled in order that a saccharo-butyric putrefaction should be unattended by indol formation. The first is that the dominant anaërobe should not be an indol producer. This is frequently the case with *B. aerogenes capsulatus.* The second condition is that the colon bacilli, of which the intestine almost always contains many that are indol formers, shall not take part in the process of putrefaction. In other instances there is an abundance of indol produced, and consequently a strong reaction for indican in the urine. The explanation of the indol putrefaction must be sought either in the indol-producing properties of the anaërobes concerned (properties which they sometimes possess in a very high degree) or in the active cooperation of indol-making colon bacilli in the putrefactive process. I have met with instances in which the colon bacilli have been so few, both in the feces and in material obtained by catharsis, that I have questioned whether they could have any considerable part in the indol production.

In this connection I would call attention to two facts relating to indol production which I think are not recognized. One is that when the bile and pancreatic juice are experimentally shut out from the intestine there may be a large production of indol in the upper half of the small intestine as well as lower down. The second point is that indol production may occur in the small intestine in the presence of a distinctly acid reaction to litmus, this reaction being due mainly to the presence of free fatty acids.[4] Further reference will be made to this point in discussing the influence of the fats on manifestations of saccharo-butyric putrefaction.

THE PRESENCE OF SKATOL.

In many instances of pronounced saccharo-butyric putrefaction, skatol has been present in the intestinal contents. Contrary to the general belief, I have found that skatol is very often absent from the intestinal tract of normal people. I have never, under any circumstances, met with it in considerable quantities; that is to say, in quantities comparable to those in which one finds indol in cases of severe putrefactive decomposition, but the largest quantities I have observed (10 mg. in 100 gm. of fresh intestinal content) have been obtained from persons suffering from severe or long-standing forms of intestinal putrefaction.

In many of these instances, putrefactive anaërobes have been extremely abundant, and I have come to regard the presence of skatol as a usual accompaniment of the saccharo-butyric variety of intestinal putrefaction, although I admit that in small quantities skatol may be found where there is certainly no long-standing or intense decomposition of this sort. I have found it very difficult to determine the conditions under which skatol is produced by putrefaction rather than indol. In the study of individual putrefactive anaërobes I have found three which gave rise to considerable quantities of skatol on pepton-bouillon. These were certain varieties of the bacillus of malignant edema, some forms of *Bacillus putrificus,* and a butyric-acid-producing anaërobe sent to me by Dr. Theobald Smith.

I believe that skatol is only rarely formed, if ever, by the *B. aerogenes capsulatus* acting on pepton-bouillon. For these reasons it seems to me not impossible that when we find considerable quantities of skatol in the feces in the course of saccharo-butyric putrefaction this must be attributed to some associated anaërobe or to some special symbeosis rather than to *B. aerogenes capsulatus.*[5] On the other hand, these considerations explain why it is that skatol is not always present even where there is pronounced saccharo-butyric putrefaction.

In many of the cases where skatol has been found in relatively considerable quantities, indol has been present

4. It is possible that in such cases there are minute portions of the intestinal contents that give a neutral or even slightly alkaline reaction to litmus, while the reaction of the contents as a whole is decidedly acid. This would explain the formation of indol, hydrogen sulphid and some of the putrefactive substances.

5. It is difficult to form a judgment on this point which takes account of the nutrient media found in the human intestine in these cases.

in smaller quantities or not at all.[6] The ethereal sulphates of the urine are generally increased whether indican be present in the urine or not.

The presence of mucus in the feces in excessive amounts is a common occurrence. It is usually present in moderately excessive rather than largely excessive amounts and in rather small strings intimately intermingled with the feces. But frequently relatively large quantities may be found on the surface in some places, while in other parts there is no excess. Commonly, too, the microscope shows an abundance of epithelial cells in the feces, often associated with mucus, but sometimes independently distributed through the contents of the intestine. In some instances, particularly where there has been associated streptococcal infection, I have found an abundance of spheroidal masses of nuclear substance which I have suspected to represent leucocytes, but some of which were probably nuclei derived from desquamated epithelial cells.

In the early stage of chronic infection with putrefactive anaërobes constipation is common. This condition is, however, varied from time to time by diarrheal seizures in which the gas-holding intestinal contents are discharged in large quantities. I attribute the constipation of this period to diminished peristalsis, due to impaired innervation of the gut and diminished secretion of bile and pancreatic juice. It is often possible, even in this early period, to determine that there is impaired secretion of free hydrochloric acid into the stomach, and it appears likely that with this there is associated a diminution in the intestinal secretions.

At a later stage of the affection, usually after it has existed several years, diarrhea is of frequent occurrence and is significant as a factor in bringing about a distinct decline in weight and strength. Usually the diarrheal movements consist largely of coccal forms, colon bacilli and anaërobic putrefactive organisms. Relatively slight indiscretions in diet suffice to bring on diarrhea. This sensitiveness I attribute to a chronic condition of congestion of the small intestine with some associated desquamation of epithelium—a condition in which slight irritation brings on a temporary increase in the local congestion and an increase in peristalsis.

Dr. Houghton[7] has lately made what I regard as a significant observation in a patient with pernicious anemia. The patient suffered with very marked manifestations of intestinal putrefaction (which, though not so described, appear to me to point unmistakably to a chronic infection with anaërobes) which it was attempted to relieve by an operative procedure which should permit free intestinal lavage.

At operation "the peritoneum resembled one subject to a low grade of inflammation without exudate. The color was darker than normal, the vessels injected, and that tissue itself very easily torn." I have long suspected that such a condition is a common occurrence in persons suffering from advanced forms of chronic excessive intestinal putrefaction, and now believe such chronic congestion will come to be recognized as a pathologic factor in many such cases.

It is not my intention to enter here on a full discussion of the clinical manifestations of chronic saccharo-butyric putrefaction, but rather to emphasize such biochemical features of the condition as are at present recognizable. I wish, however, to refer briefly to certain derangements of the nervous system, the blood and the general nutrition that may be regarded as characteristic of the affection.

CLINICAL SIGNS OF EXCESSIVE PUTREFACTION.

Among the earliest signs of excessive intestinal putrefaction is a state of debility which is usually described as neurasthenic. The patients are indisposed for work, especially in the mornings, the tension of the pulse is low and fatigue sets in quickly. The extremities are usually cold, and it is only after vigorous exercise that a better distribution of blood occurs. It appears likely that these symptoms are in a measure dependent on anemia of the nervous system, which in its turn is referable to intestinal irritation, due to the micro-organisms concerned with the infection. These neurasthenic symptoms gradually increase and may ultimately be associated with considerable mental depression, especially in those cases where the saccharo-butyric type of putrefaction is associated with the formation of considerable quantities of indol and the excretion of indican in great excess. The pulse is commonly faster than normal in uncomplicated cases.

The influence of chronic saccharo-butyric putrefaction on the blood I have discussed elsewhere, especially in its relation to severe anemias. It is only necessary to say here that the long persistence of excessive saccharo-butyric putrefaction due to the *B. aerogenes capsulatus* is followed by some degree of anemia and that in some instances this anemia is extreme, even presenting the indications of the pernicious type of the disease. While I have been unable to bring forward convincing proof that the severe forms of anemia observed in cases of chronic excessive saccharo-butyric putrefaction are due exclusively to the agency of putrefactive anaërobes, I consider that certain clinical relationships which have been observed and the marked hemolytic action of the *B. aerogenes capsulatus* point to the latter organism as the one chiefly concerned in bringing about a degree of blood destruction which can not be adequately compensated by the blood-forming organs. A not infrequent association of chronic infection of the intestinal tract with the gas-bacillus is an infection with streptococcal forms, and where this exists it is not possible to say to what extent the blood destruction is due to this associated infection, since some of these streptococcal forms possess a hemolytic action. Not rarely patients develop a slight degree of cyanosis, especially noticeable in the extremities during cold weather or early in the morning. Even in the absence of distinct cyanosis the blood may have a darker appearance than normal.

The general nutrition of patients with chronic saccharo-butyric putrefaction gradually suffers. The persistent character of the diarrhea in the advanced stages of the disease contributes largely to this result, but even where exhausting diarrheas are absent nutrition is apt to fail. The nutritive failure is shown in subcutaneous atrophies of fat and connective tissue and gradual diminution in bulk of the muscles, which sometimes undergo fibrillary tremors, as in progressive muscular atrophies. These are changes which, for the most part, are to be expected in old age, and it is true that a premature senility is a feature of chronic saccharo-butyric putrefaction.

6. The presence of considerable skatol in the intestinal tract is apt to be associated with a strong reaction to dimethylamidobenzaldehyd. This reaction is strong, however, in all persons who eat meat to excess and such excessive use of meat is probably the explanation of the reaction in some persons with putrefactive disorders.

7. Apparent Recovery from Progressive Pernicious Anemia Following Cecostomy and Colonic Lavage, THE JOURNAL A. M. A., June 29, 1907, p. 2186.

Having sketched the leading clinical characteristics of chronic saccharo-butyric intestinal putrefaction, I wish to speak of the influence of the chief kinds of foodstuffs on the course of the fermentative and putrefactive aspects of the process. While there are still many questions regarding the influence of foods on intestinal putrefaction from butyric-acid forming anaërobes to which no answer can yet be given, there are facts of theoretical and practical interest which stand out so distinctly as to merit recording.

THE INFLUENCE OF CARBOHYDRATES.

The putrefactive anaërobe which attacks sugars with the greatest activity is *B. aerogenes capsulatus*. This organism decomposes dextrose, lactose and saccharose. Gas-production is in each case rapid and abundant. Moreover, boiled starch is inverted, though not quickly. The presence of at least a trace of sugar appears necessary to initiate the growth of this anaërobe, which does not multiply on sugar-free media containing proteins or proteins and starch. The gas formed through the decomposition of sugar is mainly hydrogen, the proportion of this gas to other gases formed being 2:1 or 3:2. Of the other gases formed, carbon dioxid is the chief, but a little methane is also made. Butyric and propionic acid are freely formed and acetic and even valerianic acids may probably be produced in traces.

I consider it noteworthy that patients with chronic saccharo-butyric putrefaction tolerate carbohydrates badly. In the early stages of the affection a meal rich in carbohydrates, whether in the form of sugars or starches, appears to make little difference (although there is some evidence that the sugars give rise to the most disturbance) causing moderate intestinal flatulence, abundant but formed stools, smelling of butyric acid, and perhaps also an increased frequency in micturition.

There is often a sense of drowsiness or dulness after an excessive carbohydrate meal, but seldom headache. In later stages of the affection, when the general nutrition has begun to fail and the patient falls below the normal weight, there appears an increasing sensitiveness to carbohydrate food which shows in the prompt occurrence of diarrhea and intestinal flatulence after any excess. Indeed, there comes a time when carbohydrates, even in amounts that would be called physiologic and moderate for a normal man, cause distress from gas and soft, ribbony stools, if not diarrhea.

This abnormal sensitiveness may be so highly developed that diarrhea becomes a frequent occurrence and through its frequency makes further inroads on the weight and strength of the patient. Under such circumstances a pronounced restriction in the quantity of carbohydrates becomes imperative, for every infringement of a rigid dietary is promptly followed by increased peristalsis, abdominal discomfort, unformed movements or watery diarrhea. Sometimes diarrhea promptly follows the error in diet, in the course of a few hours, but more often there elapses a period of twelve to eighteen or twenty-four hours. In the period following the excessive use of sugars or starches and before the onset of unformed movements, the subject of this affection may become lethargic or even prostrated to such an extent as to feel quite indisposed for work or exercise. I am disposed to attribute this temporary state of lethargy (which may be only an exaggeration of the habitual condition) to the increase in the chronic congestion of the intestinal mucosa, which, as already mentioned, I assume to be a usual feature of the pathologic process in its advanced stage.

I consider the clinical phenomena just described as best explicable on the supposition that there has been an upward invasion of the small intestine by the gas-bacillus, although at the present time I have no proof based on early autopsies that this is actually the case in man. The presence of excessive numbers of gas-bacilli in the feces in diarrheal stools gives no positive indication of the level of the intestine at which they have actively multiplied, but in connection with the free formation of gas in the small intestine after carbohydrate food makes it reasonable to believe that these organisms are actively engaged in fermentative decomposition above the ileocecal valve, since no other bacteria found in the stools of these patients possess a gas-making capacity at all comparable with that of *B. aerogenes capsulatus*.

There is probably little simultaneous bacterial attack on the proteid food in the small intestine, for the gas-bacillus acts preferentially on the carbohydrates of the food. Nevertheless, free multiplication on carbohydrates prepares suitable conditions for subsequent putrefaction, as the gas-bacillus decomposes proteids more actively when carbohydrates gradually become scarce. Unless, therefore, the intestine be relieved of its proteids by the occurrence of diarrhea, gas-bacillus fermentation in the small intestine facilitates putrefaction at lower levels.

The maintenance of a strongly acid reaction is antagonistic to putrefaction, but alkali may be derived in sufficient quantity from the succus entericus of the pancreatic juice to neutralize such volatile fatty acids as fail to be absorbed. When the reaction of the intestine approaches neutrality to litmus the decomposition of proteid begins. This proteid decomposition yields both butyric acid and ammonia, and the latter may be sufficiently abundant to establish a neutral or even slightly alkaline reaction.

In the advanced stages of chronic saccharo-butyric putrefaction there is developed a marked sensitiveness of the digestive tract to acids, which may lead to diarrhea. The digestive tract may become so intolerant of acids that ordinary moderate quantities of kumyss or bacillac or zoolak cause increased peristalsis or diarrhea owing to the lactic acid they contain. An equal volume of water may stimulate peristalsis, but does not cause diarrhea. The intolerance to fruits which exists in these patients is due in part to the organic acids they contain, but in part, of course, to their content of carbohydrates which yield butyric and other volatile fatty acids. Indeed, the intolerance of this group of patients to carbohydrates in general is probably to be interpreted as an excessive sensitiveness of the mucous membrane of the small intestine to the organic acids formed from carbohydrate cleavage.

It is perhaps hardly necessary to add that this sensitiveness (due to chronic inflammation) expresses itself also in an intolerance for mechanical irritants, such as cellulose, the seeds of berries, etc. In some instances of this affection the mouth quickly develops an acid reaction from the use of carbohydrates. This is, however, due to other varieties of bacteria than the gas-bacillus and does not appear to be a constant occurrence. Moreover, this excessive acidity of the mouth after taking sugar may be observed in persons who do not show any definite indications of the saccharo-butyric type of intestinal putrefaction.

INFLUENCE OF FATS.

The effect of fat on the course of the saccharo-butyric process in the intestine has received little consideration and is at present only imperfectly understood. The fact that neutral fats are relatively resistent to the cleaving action of bacteria leads one to suppose that they play an unimportant part in digestive disturbances characterized by excessive fermentation and putrefaction. On the other hand, there is clinical evidence that in many disorders of digestion the fats are not well tolerated. The chief manifestations of such intolerance are:

1. A tendency to nausea or regurgitation (especially in children) or even vomiting.

2. Abdominal discomfort referred to the intestine.

3. An impaired absorption of fat from the intestinal tract.

Any or all of these manifestations may be observed in cases of saccharo-butyric putrefaction after a meal rich in fats, but none of them can be regarded as in any way characteristic of the process. It should, however, be stated that, although exact fat metabolism experiments are as yet wanting in cases of well-defined saccharo-butyric putrefaction, there is considerable clinical evidence to show that even where moderate quantities of fat are ingested many persons suffering from this putrefactive disorder show a larger percentage of neutral fats and fatty acids in the feces than is the case with normal persons on a similar diet. This holds true even where there is no increase in peristalsis, to which diminished fat absorption might reasonably be ascribed. The necessity for accurately conducted metabolism experiments in such cases is evident.

In relation to the saccharo-butyric type of putrefaction there are two questions in reference to the destiny of the fats which arise prominently: First, how do the putrefactive anaërobes act on neutral fats in regard to their cleavage into fatty acids and glycerin, and, second, what is the influence of the fats on the anaërobic putrefaction of proteids?

THE TECHNIC.

In order to determine the fat-splitting action of various intestinal bacteria on neutral fats, a number of observations were made on media containing a sample of olive oil containing less than 1 per cent. of free fatty acids. In the earlier experiments made the medium consisted of 50 c.c. of peptone bouillon, 20 gm. of olive oil, 20 gm. of ground boiled beef, 100 c.c. of water and a large excess of calcium carbonate. A flask containing this medium was inoculated with fecal emulsions containing an abundance of *B. aerogenes capsulatus*. This fecal material was from a dog in which the biliary and pancreatic ducts had been resected and which showed evidence of greatly excessive intestinal putrefaction. A second flask was inoculated with a fecal emulsion from a dog with a shortened large intestine, but otherwise normal, fed on meat. A third flask was inoculated with human fecal emulsion containing an abundance of *B. aerogenes capsulatus*. The period of incubation was forty hours. The first flask contained 45 per cent. of free fatty acids, the second 37 per cent., and the third 29 per cent.

As it was desired to extend these observations to a greater variety of bacteria, another series of cultures was made. In this series the medium so employed was, for the sake of convenience, used in test-tubes instead of flasks. Each test-tube contained:

Olive oil	2 gms.
Pepton-bouillon	7 c.c.
Boiled beef (ground)	5 gms.
Calcium carbonate	1 gm.

In addition to the control tubes, tubes inoculated as follows were placed in the incubator: 1, Tubes containing fecal suspensions of bacteria, among which *B. aerogenes capsulatus* was abundant, the fecal material having been heated to 80 C. for 20 minutes to destroy vegetative forms; 2, heated fecal suspensions from another subject, containing *B. aerogenes capsulatus*, but in smaller numbers (this material was also heated to destroy vegetative forms); 3, fecal suspensions from normal breast-fed child, unheated; 4, *B. coli communis* (New York Health Board stock); 5, *B. putrificus* (Bienstock) obtained from Kral.

The repeatedly sterilized media, after inoculation with the above material, were incubated for 40 hours. In all cases there was some separation of fluid into layers with an oily layer of varying thickness at the surface. The inoculated tubes also showed a varying quantity of yellowish, cream-like material. The tubes inoculated with human fecal emulsions all had a pungent putrefactive odor with a somewhat sickening sweetish quality. The odor from the culture-free material from the breast-fed child was slight and rather ammoniacal; the odor from the *B. coli* inoculations was faint and slightly putrefactive; the odor from the *B. putrificus* inoculations was moderately putrefactive with a slightly sweetish quality and not ammoniacal.

After incubation the fat was extracted (though not completely) by repeated shaking with ether. The ethereal extract was filtered through absorbent cotton to remove whitish particles suspended in the extract. The ethereal extract was then washed with about one-quarter its volume of water to remove acids other than fatty acids. The ethereal extract was placed in weighed vessels, evaporated to dryness in the water oven and weighed, and then dissolved in boiling alcohol and titrated with a decinormal alcoholic solution of potash with phenolphthalein as an indicator. In cases where some insoluble material unavoidably found its way into the ethereal extract, the vessels were dried and weighed again for the correction of this error after throwing out the substance soluble in ether. The results showed that in the tubes inoculated with human fecal emulsions there had been a high degree of fat-splitting—in one case 72 per cent.; in a duplicate, 59 per cent.; in a second case, 77 per cent. In the tube inoculated with the fecal extract from the breast-fed child the percentage of fatty acids was 4.2 per cent. In the tubes inoculated with colon bacilli and with *B. putrificus* alone, the quantities of fatty acids recovered were less than 2 per cent.

(To be continued.)

THE OPHTHALMO-TUBERCULIN DIAGNOSTIC TEST.

SOME CLINICAL OBSERVATIONS.*

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The early diagnosis of tuberculosis has so recently seemed to be appreciated as of vital importance that there has barely been time to extend the use of means other than physical examination into general use.

The tuberculin test, applied subcutaneously in small doses, is one of the most valuable confirmatory measures when a positive reaction is obtained, yet it still has terrors for those unfamiliar with it. Although rapidly coming into wider use, it is an unpleasant method and almost comparable to general anesthesia when employed for diagnosis. Moreover, when used carelessly or in overdoses it is as capable of doing harm as any of the poisonous alkaloids. These facts need not deter the general practitioner from its use when other means of diagnosis fail, yet it will doubtless not become popular. Any modification of the test which would do away with its unpleasant or dangerous features would, of course, be exceedingly welcome, provided it

* Read at the First Annual Meeting of the Fourth District Branch of the Medical Society of the State of New York, Saranac Lake, N. Y., Sept. 18, 1907.

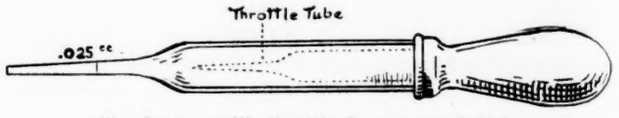
were equally reliable. Such is hoped for the method simultaneously proposed by Professor Calmette[1] of Lille, France, and Wolff-Eisner[2] of Berlin during the spring of the present year.[3] This method is the instillation of a drop of weak tuberculin solution (1 per cent.) into the eye whereby a conjunctival hyperemia is induced in infected individuals. This is due to the increased sensitiveness of the tissues of tuberculous as compared with non-tuberculous persons who should exhibit no signs of irritation from the same procedure when the dose is small.

A variable degree of local irritation at the site of injection of tuberculin has long been noted in subcutaneous use on tuberculous patients, but its significance was not fully realized until the studies of von Pirquet[4] on so-called accelerated reactions in revaccination against variola. The rapid development of hyperemia and swelling in the scarifications of secondary vaccination which quickly subsides, leaving no pustule—i. e., no infection—recalled the well-known experiments of Koch which led to the discovery of tuberculin. Koch noted that in a tuberculous guinea-pig a second inoculation under the skin was followed by much more swelling than from the first and the rapid formation of a slough without involvement of the neighboring lymph nodes as in primary infection; in short, the second inoculation was resisted. Other phenomena of importance were observed in these experiments, such as the healing of the ulcer from the primary inoculation, which led Koch to the therapeutic use of tuberculin, but they have no direct bearing on the subject in hand. von Pirquet's attention was directed consequently to the effect of tuberculin rubbed into scarifications. In 360 tests on children in Vienna and Berlin clinics it was found that a well-marked difference was obtained in the reaction hyperemia between tuberculous and non-tuberculous children under two years of age, but in older individuals this was slight. Hence, as a diagnostic test, it was not available except in children. Like results were obtained by Arloing[5] and Vallée[6] in cattle, rabbits and guinea-pigs, very uncertain reactions being produced in scarifications.

An explanation of the specific sensitiveness of infected individuals to the poison of the respective disease is found in the reactions of immunity, especially that of anaphylaxis. In the case of tuberculosis it represents at least one phase of resistance, though by no means enough to constitute immunity, and is expressed chiefly by a local leucocytosis accompanying the hyperemia. At the site of disease the cells surrounding the tubercules develop marked reactive power to the stimulus of tuberculin injections as seen in the local reactions in lupus. Like sensitiveness, but to a less degree, is acquired by the cells of the tissues in general according to the impress which they receive indirectly from absorption into the blood of products set free from the disease foci, i. e., the tubercles. There is possible, therefore, a wide range of difference in the response which the skin may show to tuberculin when directly applied, dependent on the amount of the infection, its virulence, the age of the tubercles, and especially the length of time during which the body is subjected to the absorbed tuberculous products. Added to these factors it must be admitted as possible that individual idiosyncrasies exist such as are seen in the rashes caused by quinin, atropin, etc., which must be reckoned with in interpreting results of diagnostic tests.

The choice of the conjunctiva for the exhibition of this test is particularly happy if it shall be found of sufficient value in diagnosis, for no constitutional reaction follows nor has any harm locally to the eye been noted; it would not be reasonable to expect it, as no tubercle bacilli are instilled with the solution nor should anything except sterile solutions of tuberculin be employed. The conjunctiva, being very responsive to irritants and highly vascular, indicates (with the white background of the sclera) very delicate differences when the tested eye is compared with the opposite one. Possibly the test may prove too delicate, but as compared with the cutaneous reaction produced by scarification as applied by von Pirquet after the manner of vaccination, it is obvious that more careful observations can be made.

The experiments made by Letulle,[7] Calmette[2] and their associates were made with a solution of 1 per cent. in water of dried tuberculin which was prepared by the precipitation of crude tuberculin with alcohol, the precipitate being collected and dried as in Koch's original purified tuberculin. The glycerin and beef extract salts are thus removed. The instillation of one drop of the solution into the eye was followed in from three to eight hours by a varying degree of hyperemia, lachrymation and "sandy" feeling in all the tuberculous patients tested. The redness reached its maximum in from twelve to twenty-four hours, remained from one to four days and gradually subsided so that no trace remained after a week. Purulent secretion occurred owing to an exudate of leucocytes, and in the height of the reaction edema of the eyelids was sometimes present. Marked discomfort did not result.



Eye-dropper with throttle for measured drop.

In over 300 tests made on hospital patients the non-tuberculous diseases were uniformly negative and autopsy findings confirmed the positive and negative results of the tests in some instances. Professor Comby,[8] the Paris pediatrist, tested 132 children at random in his hospital service, using a 0.5 per cent. solution. No harm resulted to any child: 62 reacted positively, 70 were negative. Autopsies on 10 confirmed the findings, and the presumption was that the reacting cases were instances of latent tuberculosis.

AUTHOR'S METHOD.

In my own experiments a filtered sterile normal saline solution of two strengths was used and a measured drop (0.025 c.c.) was considered advantageous to insure accuracy of dosage. The latter was accomplished by the use of the throttled eye-dropper shown in the illustration with a calibrated mark to 0.025 c.c. The throttle permits the easy control of the liquid when it is filled to the mark.

The two solutions of 0.5 per cent. and 1 per cent.[9]

1. Presse Médicale, June 19, July 13, 1907.
2. Berl. klin. Wochschr., June 3, 1907.
3. This subject was also discussed editorially in THE JOURNAL, Sept. 28, 1907, p. 1119.
4. Berl. klin. Wochschr., May 20, 1907.
5. Comptes Rendu de la Soc. de Biol., June 28-29, 1907.
6. Comptes Rendu de la Soc. de Biol., July 12, 1907.
7. Presse Médicale, July 3, 1907.
8. Presse Médicale, Aug. 10, 1907.
9. Later 0.33 and 0.5 per cent. were adopted as the reaction seemed too strong with this particular preparation. Clinical trial forms the only standard for different specimens.

respectively, were employed successively in each eye. When the first failed to react the stronger was instilled into the other eye after forty-eight hours. By this method severe reactions may be avoided in cases of suspected tuberculosis, though if time failed the stronger solution might be used without serious discomfort being anticipated should a marked reaction follow. In order to avoid any danger of contamination the solutions were sealed in glass tubes containing three or four drops and then boiled. These can easily be broken in a piece of gauze or cotton at a file mark. The eye-dropper is then inserted, after being cleansed with alcohol and sterile saline solution. Care is used to prevent spicules of glass getting in, which would be inexcusable carelessness should it occur.[10] The solution should be warmed in cold weather.

The lid of one eye is pulled down and the measured drop instilled as with any other fluid by holding the eye-dropper parallel to the eye, but care should be observed that it does not overflow on the cheek; this is easily accomplished by holding the lid down until the drop is distributed about the sac.

SCHEMA FOR RECORDING REACTIONS.

A provisional schema for recording reactions was adopted which is similar to one recently given also by Professor Comby:[8]

Negative.—No difference in color when lower eyelids are pulled down and compared.

Doubtful.—Slight difference with redness of caruncle.

\+ = Distinct palpebral redness with secretion.

++ = Ocular and palpebral redness with secretion well marked.

+++ = Deep injection of entire conjunctiva with edema of lids, photophobia and secretion.

CLINICAL OBSERVATIONS.

The tests thus far made by myself comprise 75 individuals, of whom 7 received a second test and 1 a third. My colleagues, Drs. Trembley, Allen, Twitchell and Brown, have tested about 35 persons, while Dr. Rathbun of the Stony Wold Sanatorium has also made some tests in 25 tuberculous and 6 healthy subjects.

Some very interesting results have been developed and difficult questions raised as to the interpretation of the reactions in supposedly healthy persons, for our attention has been especially directed to these and to the considerable number of persons with suspected tuberculosis who come for examination and diagnosis during the summer months. It is intended here to give only a brief summary of the results, leaving out the minute details for consideration at a later date. Dr. J. Woods Price has carried out some experiments in rabbits under Dr. Trudeau's direction, which will also be published later.

The classification in the table has been made of 137 cases to be reported on at present and a few comments will be made on the results. These include 62 cases observed by the colleagues above mentioned.

The first thing that one notes in the table is that practically all the tuberculous cases, past or recent, reacted and generally the reaction was plainly marked. The one patient with miliary tuberculosis was very weak and anemic and with a daily temperature of from 100 to 102° F. It is well known that such patients often have feeble reactive power to tuberculin when given subcutaneously. This is due to the exhaustion of the reaction mechanism by excessive absorption of poison. It remains to be determined how the reactions will occur in early tuberculosis with febrile conditions.

I. Pulmonary tuberculosis; No. cases, 45.	Reacted	42	
	Doubtful	1	
	Negative	2	(1 miliary and 1 tuberculin-treated.)
II. Pulmonary or other tuberculosis; healed from 1 to 17 years. No. cases, 9.	Reacted	8	
	Doubtful	1	(17 years).
III. Pulmonary or other tuberculosis suspected. No. cases, 26.	(a) From history, 14 cases	Reacted	4
		Doubtful	4
		Negative	6
	(b) From symptoms, 8 cases	Reacted	2
		Negative	6
	(c) From physical signs, 4 cases	Reacted	2
		Negative	2
IV. Apparently healthy persons. No. cases, 57.	(d) With family history of tuberculosis. 18 cases.	Reacted	8
		Doubtful	1
		Negative	9
	(e) Constantly associated with tuberculous doctors, nurses, husbands and wives of invalids. 18 cases	Reacted	6
		Negative	12
	(f) With no family history or exposure. 21 cases	Reacted	2
		Negative	19

It is also to be noted that among the suspected cases only about one-fourth gave a distinct reaction, while the same proportion of persons reacted who were supposedly free from the disease. It is especially noteworthy that in the table in Class f 16 of the 21 individuals were farmers and guides exposed to wind and sun but not to the disease; none reacted, while of 5 indoor persons 2 reacted. All of these had a full dose.

Possibly it should not be strange that so many apparently healthy persons who have been closely associated with the disease in family or occupation should react. The frequency of slight infection is unquestionably great, as postmortem records show; yet it may easily be questioned whether such infections leave behind a specific susceptibility so delicate as to cause confusion in diagnosis. A point here worth mentioning is that in most of the reactions among presumably healthy persons the dose was large or repeated and the hyperemia was later in developing; this was strong, however, in three individuals who were recorded +++ and who received the 1 per cent. solution. Three patients who reacted + noted stuffiness of the nostril on the corresponding side and accompanied by a slight coryza. In one severe reaction there were muscular pains during its height which suggested a general response.

Naturally, the question arises: What is the limit of tolerance of the healthy conjunctiva for this test? Only one case is available in answer. One of our healthy colleagues, who had two years ago tolerated a full dose of tuberculin subcutaneously (10 mg.) without reaction, failed to react to the two solutions above described, but on a third test with a double strength (equal to a 2 per cent. solution) had a moderately red eye. Hence we may say, at least with reference to the preparation which we have used, that reactions with a 1 per cent. or stronger solution are of no value. It has also occurred to me that the same eye should not be used for a second test within a short time, as a susceptibility is possibly established by the first; this, however, is not certainly determined by our tests thus far.

The question will also naturally be asked: How do the subjects who have been tested in the eye behave when tested subcutaneously in the usual way? We have five patients on whom such a test has been made by my associates, besides the healthy colleague above mentioned. Four were negative to the eye test, one was questionable to the No. 2 solution. On being subsequently tested subcutaneously one was negative to 1,

10. Capillary tubes such as are used for glycerinized vaccine might be adapted for the purpose, each containing one dose.

3, 5, 10 and 10 mg; two were negative to 7 mg., one of these having had a doubtful eye reaction; one (a child) was negative to two eye tests and to 0.1, 0.5 and 2 mg. subcutaneously; the last (known to be luetic) reacted to 5 mg., but not to No. 1 solution in the eye.[11]

It is evidently premature to express an opinion as to the value of this test in diagnosis as compared with the subcutaneous one. From the table given, however, one can see a close similarity in results to those obtained with the fever test which, when systematically given to healthy and suspected individuals, has shown a high percentage of positive reactions—even from 50 to 60 per cent. The most one can say to-day is that a prompt positive reaction to a small dose adds to a suspicion when symptoms of tuberculosis are present. Whether a negative result to a full dose is equally valuable or not in excluding tuberculosis, it is a comfort to think this until autopsies prove the contrary.

CONTRAINDICATIONS.

Some mention should be made of contraindications to the use of this test. These relate naturally to diseases of the conjunctiva, eyelids and cornea, such as acute or chronic conjunctivitis, hay fever, blepharitis, ulcers, trachoma or any disease of the cornea and internal structures of the eye. Mere eyestrain from errors of refraction need not prevent its use, but undue exposure to dust, smoke or strong light should be avoided during the test. Obviously, the test should not be used when the diagnosis can be clearly made by physical or microscopic examination.

One word of caution is to be given to the physician in the use of this easily applied test and in recommending it to patients. No value is to be placed on a positive reaction in the absence of symptoms of tuberculosis which might require treatment. A reaction occurs as well in a long healed patient as in a recently developing, latent lymphatic or pulmonary case. Hypochondriasis might easily be caused in persons of sensitive temperament, while with negative results a sense of false security might be engendered which would not be warranted from our present knowledge. Only carefully controlled results at the postmortem table will give us the real limitations of these methods of diagnosis.

Later reports from ophthalmologists indicate its value in the differential diagnoses of eye diseases.

URINARY INFECTION IN CHILDREN.*

I. A. ABT, M.D.
CHICAGO.

Infection of the bladder and of the renal pelvis has been the subject of frequent comment in recent literature. It occurs in young infants and should be considered a common disease. Escherich[1] in 1894 reported a series of cases under the caption of colicystitis. Since then cases have been reported, both isolated and in series. Nevertheless, they are frequently overlooked in private practice, and the object of this paper is to call attention to this febrile disorder.

11. Later reports from ophthalmologists indicate its value in the differential diagnosis of eye diseases.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Ueber Cystitis bei Kindern hervorgerfen durch das Bact. coli commune. Certggeh. am. feb., 1894, 26.

ETIOLOGY.

Cystopyelitis, in the vast majority of cases, is a bacterial infection. The colon bacillus is nearly always the causal micro-organism in the production of the disease. Indeed, so frequently is this bacterium found that Escherich designated the disease as colicystitis. Other forms of micro-organisms have been described; thus the proteus group has been found. Monti[2] says that the *Bacillus pyocyaneus* and the lactic acid bacillus may cause the infection. Pus cocci, gonococci, typhoid bacilli and tubercle bacilli may produce cystopyelitis.

We must remember that, in some cases in infancy and in childhood, cystitis may occur as it does in later life as the result of the rupture of an appendiceal abscess into the bladder, the introduction of foreign bodies into the bladder, which is not at all an infrequent occurrence in young children. Vesical calculi and tumors of the bladder may cause vesical inflammation. Cystitis sometimes, though rarely, occurs after scarlatina, diphtheria, measles and chickenpox. Tuberculous cystopyelitis may occur. This variety runs a protracted unyielding course, and careful search must be made for tubercle bacilli or tuberculous lesions in other parts of the body.

In typhoid fever the typhoid bacillus is frequently found in the urine. In these cases, according to some personal observations, I believe that the typhoid bacillus may produce cystitis, if not pyelitis. In the cases of typhoid in which I found Eberth's bacilli in the urine I always found pus present. Sometimes colon bacilli are found in the urine, pus being absent. In these cases there is no constitutional disturbance; this condition is spoken of as bacteriuria.

The manner in which the micro-organism gains access to the bladder and to the pelvis of the kidney is still a matter of opinion. Three possibilities naturally suggest themselves:

1. Bacteria may enter the bladder through the urethra and migrate upward into the bladder and thence to the kidney.

2. The infection may be hematogenous in character, the micro-organisms finding access into the bladder through the blood vessels.

3. The micro-organisms may pass in some manner, not accurately understood, from the bowel through the loose cellular tissue of the pelvis into the bladder. The fact that sometimes a bowel infection, particularly follicular enteritis, precedes an attack of cystopyelitis has suggested this view. Dr. James Ritchie,[3] at a meeting of the Obstetrical Society in Edinburgh, reports a case of cystopyelitis in an infant 7½ months old. The interesting point in connection with this case is that Ritchie considered that the infection took place through an anal fissure; this does not seem tenable.

It appears to me that the infection in the majority of cases is an ascending one, the infective material being introduced into the bladder through the urethra. The fact that by far the largest number of infections occur in female children and that so many infants, even among the more intelligent people, are permitted to lie for hours in soiled napkins, cleansing of the genitalia usually neglected, makes this manner of infection a most probable one.

Congenital malformation of the bladder and kidney predisposes to cystitis and pyelitis. Such a case has come under my observation and will be referred to later.

2. Pyelitis in Kindersalter Allg., Wien. med. Ztg., 1907, 53, 221.
3. THE JOURNAL A. M. A., xxxix, 384.

SYMPTOMS AND COURSE OF THE DISEASE.

During the past several years twenty-two cases of cystopyelitis have come under my observation. They occurred mostly in young infants less than 18 months old. Nearly all of them occurred in private practice and among families in comfortable circumstances. In most of my cases the trouble began suddenly.

I usually elicited the following history: The child had apparently been well until it was noted that it became restless and feverish, and very often some disorder of the bowel was suspected. The condition of the bowels did not seem sufficient to cause the severe symptoms. Most of these children were excessively restless, they were pale, and where the condition had persisted for some time they had lost in weight. The fever (Figs. 1 and 2) as a rule was irregular, although it was high. Several times it was noted that the high temperature continued for a number of days, then a remission of one or more days occurred and soon the fever returned. The children refused all food as a rule. The restlessness seemed a very marked symptom. In several of my cases the children were carried about and every effort was made to quiet them. Sometimes a few râles were heard over the lungs.

One child 14 months old, suffering from pyelitis, that I had known previously and that had been a quiet child, became extremely restless and fretful, was awake and cried nearly all night as if suffering pain. She made very material progress when the urine became free from pus. Another female infant, about 11 months old, suffered from frequent and painful urination. The urinary examination showed the presence of pus and colon bacilli. Some infants have abdominal colic and pain over the region of the bladder. Sometimes, too, it seems possible to elicit pain over the region of the kidney, if pressed on, although, of course, this sign must be accepted with caution. The infants usually suffer from anorexia, they are nearly always thirsty; some of them vomit persistently.

The course of the disease may be protracted and unyielding, though if recognized early and treated vigorously the duration of the disease is comparatively short. According to Trumpp,[4] two varieties of the disease may occur: First, a mild form with local and, for the most part, insignificant symptoms; second, severe forms accompanied by local and more or less severe constitutional symptoms. If constitutional disorders are present vesical tenesmus and pain and burning on urination are nearly always noted. In the acute case it is sometimes difficult to determine whether the infection remains localized in the bladder or takes an ascending course, involving the pelvis of the kidney or the kidney itself; thus it is not always possible to state whether the condition is cystitis or pyelitis or both.

In several of my own cases casts were found in the urine in considerable quantities, as illustrated by the following case:

History.—First day: The urine of a 20-months'-old baby, with a sharp attack of acute cystopyelitis, showed a slight amount of albumin, granular casts and leucocytic casts in abundance, and considerable pus and epithelial cells of all varieties, from the small oval to large squamous. The amount of urine was small.

Second day: The urinary flow became more copious, the casts had nearly all disappeared. The pus cells and epithelium remained.

Third day: Pus was present in great quantity—epithelium cells seemed to be hidden from view by a great quantity of pus.

Fifth day: Pus cells were disappearing and small epithelial cells preponderated. There were numerous rod shaped motile bacilli (colon), no casts.

Sixth day: Pus was much less in amount. Large epithelial cells had nearly disappeared—a few small ones persisting—bacteria fewer in sedimented urine.

In this case it is noticed that hyaline and granular casts were present in considerable quantities on the first examination, although they rapidly disappeared as the amount of urine became more abundant. As the child seemed to recover from the disease, we thought in this case that the presence of the casts was undoubtedly due to a condition of renal congestion brought about by an obstruction of the urinary flow through the ureter. At any rate, the casts disappeared entirely, while large quantities of pus and epithelial cells remained for many days.

In one of my cases, a 13 months' old female baby, brought to me after having been treated for a long time for a supposed gastrointestinal disturbance, had a very high fever, which at times exceeded 105 F. The child was emaciated and refused food, cried most of the time and seemed to be in pain. The urine contained abundant pus and epithelial cells and showed the presence of colon bacilli. In this case hyalin and granular casts were frequently found. As a rule it was noted that the casts were most numerous when the pus was least in evidence. Whether this fact pointed to a retention, or whether the casts were more easily detected in the absence of pus, it is difficult to say.

The disease in this case ran a protracted course and was a source of considerable anxiety. The possibility

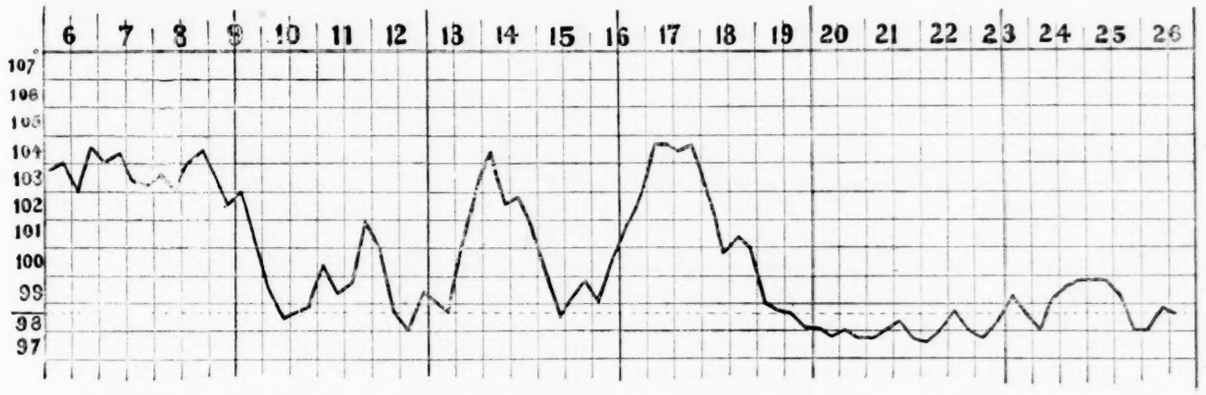


Fig. 1.—Temperature chart in a case of cystopyelitis in an infant 10 months old.

4. Jahrb. f. Kinderh., lxiv, 249.

of a tuberculous infection was thought of, although tubercle bacilli were not found. In this case Dr. Gustav Kolischer of Chicago kindly made a cystoscopic examination of the anesthetized child and he found pus exuding from both ureters. The mucosa of the bladder was apparently normal, both ureteral openings gaping and of a dark red color and each urinary whirl showed the expulsion of pus from both ureters. From the findings he thought the case to be a bilateral pyelitis.

The infant, after a protracted and wearisome illness, made a complete recovery and, to my knowledge, has remained well ever since.

According to Baginsky,[5] pyelonephritis may complicate pyelitis, and Heubner has seen a pyelonephritic abscess after pyelitis. Malformations of the kidney and bladder sometimes predispose to a colon infection. A 6 weeks' old infant in my service at the hospital was found to be suffering with continuous fever and a tumor which could be palpated through the abdominal wall. The tumor was situated in the median line and proved later on autopsy to be a fused kidney. The urine contained pus. Examination of the kidney, postmortem, showed that its pelvis contained pus, and miliary abscesses were found in the kidney substance.

URINARY EXAMINATION.

The urine is usually cloudy and the specific gravity low—1.007 to 1.015. In the colon bacillus infection the

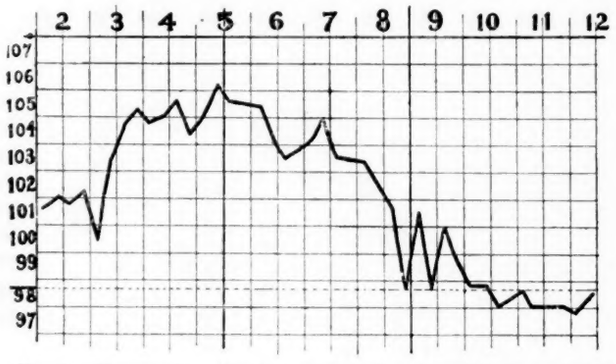


Fig. 2.—Temperature chart in a case of cystopyelitis in an infant 1 year old.

reaction is acid. A trace of albumin is nearly always present. Indican is frequently found. Microscopic examination invariably reveals a considerable quantity of pus in these cases. Epithelium from the bladder, the pelvis and the kidney may be seen in the microscopic preparation. The colon bacilli are usually found in a centrifugalized specimen or they may be cultivated on the various media.

The acid reaction of the urine is an important point in the examination. While colon bacilli occur in acid urine, streptococci and staphylococci are usually found in alkaline urine. In tuberculous cystitis the urine is acid in reaction. The latter variety is comparatively rare and is usually a complication of renal or disseminated tuberculosis. The examination of the blood, which was made in a large number of my cases, showed a marked leucocytosis, the leucocyte count carrying from 16,000 to 28,000, the hemoglobin from 60 to 80 per cent.

A child that had suffered for a long time from a protracted and unrecognized cystopyelitis had grown very weak and had lost in flesh so that it was a mere skeleton. The urine contained large quantities of pus, all varieties of epithelial cells, nearly all varieties of casts, and undoubted colon bacilli. This child did not respond to the usual treatment and, after a protracted illness, died. Another patient, with a pre-existing gonorrheal vulvovaginitis, showed evidence of an undoubted cystopyelitis with the presence of gonococci and pus in the urine. Gonococcus cystitis is rare, considering the comparatively large number of cases of gonorrheal vulvovaginitis observed in young children.

Of the twenty-two cases of cystopyelitis which I have observed and recorded, one infant, 6 weeks old, died with malformation of the kidney complicated by a cystopyelitis and pyelonephritis. Another child died from a protracted and neglected cystopyelitis. Of the remaining twenty cases all the patients recovered. Twelve cases were severe and the patients continued ill for from ten days to four weeks, exhibiting considerable fluctuations in the fever and the other symptoms referred to. Eight patients were sick ten days or less. They manifested the usual restlessness, fever and pyuria. That the patients in this last group of cases were sick for so short a time I think depended somewhat on the fact that the disease was early recognized and vigorously treated. Relapses occurred in two cases of the severer type of the illness in which the urine of the patients became practically clear in the third or fourth week the fever, restlessness and all the symptoms disappeared. One patient had a return of the illness in two months. The other patient had three attacks during a year. Each attack lasted several weeks and was characterized by the usual symptoms.

Of the twenty-two cases one was a male infant who had all the symptoms observed in typical female cases. The youngest child was 6 weeks old. The next youngest was 3 months old; from this they varied in age up to 2 years. The prognosis of cystopyelitis, if early recognized and properly treated, is favorable. If the case remains untreated for a long time the cystopyelitis may lead to more or less kidney involvement and eventually the process may cause death.

DIAGNOSIS.

The diagnosis can only be made by a microscopic examination of the urine. It can not be too strongly emphasized that infants, who are suffering from irregular, persistent fever for a succession of days, should in every case have the benefit of both chemical and microscopic urinary analysis. The presence of pus in an acid urine, together with epithelial cells and occasional casts and colon bacilli, is proof positive of the existence of a cystitis, a pyelitis, or both.

TREATMENT.

As a prophylactic measure nurses and mothers and all who are entrusted with the care of young children should be told of the importance of careful cleaning of the buttocks and the region of the genitalia. (It is possible to conceive how feces which for a considerable time are in contact with the vulva may cause an infection of the bladder.) The treatment depends on the particular cause of the disorder. If a stone or a foreign body is the causal factor of the cystitis it is evident that surgical intervention is indicated. If, on the other hand, the condition is due to an infection, particularly with the colon bacillus, the treatment should consist in the abundant administration of fluids, especially of water.

The excessively high temperature should be treated hydrotherapeutically. The infant may sometimes be

5. Verhandl. des Vereins f. innere Med., 1897, s. auch Deutsche med. Wochschr., 1897, xxv.

quieted by the application of an ice-bag to the head or cool compresses to the body. Medicinally urotropin (hexamethylenamin) is by far the most valuable remedy; this may be given in one grain doses, four times daily, to infants from 1 to 2 years of age. If the drug is well borne the dose may be gradually increased.

In a note which I have published elsewhere[7] I have shown that urotropin acts very favorably in these cases, although it may cause renal and vesical irritation. In normal children its continuous use is capable of causing urine to reduce Fehling's and Haines' solution, thus simulating the sugar reaction obtained in cases of glycosuria or diabetes.

Salol may be given either alone or in combination with urotropin. Children from 1 to 2 years of age may be given one grain of salol four or five times daily. In one of my cases, to which I have already referred as an undoubted illustration of cystopyelitis, I used for a long time both urotropin and salol without bringing about complete recovery. I finally tried one drop doses of pure guaiacol in orange juice three times daily. This seemed to have a favorable effect on the disease. It may also be said in passing that pure guaiacol has been recommended in cases of tuberculous cystitis and pyelitis. Comby reports a case of colicystitis treated with two injections of colon bacillus serum. He also irrigated the bladder with a from 3 to 10 per cent. protargol solution. Kastner[8] suggests citrate of potash in the treatment. Holt[9] makes a similar recommendation.

During the febrile stage the nourishment should be largely liquid; it should be non-irritating, and should be diluted so as to meet the digestive ability of the infant.

It has been variously advised to irrigate the bladder with boric solutions, protargol, argyrol, etc. Originally Escherich advised the use of lysol irrigations in his cases; this plan of treatment is not called for and is likely to do more harm than good. The ordinary urinary antiseptics in one form or another, used internally, will usually bring about the desired result. In the severe forms of streptococcus or staphylococcus infection vesical irrigation may be indicated. In other respects the treatment is purely expectant and symptomatic. The pain and restlessness may require the use of antispasmodics and sedatives.

DISCUSSION.

DR. A. C. COTTON, Chicago, admitted that the urinary disorders of young infants are frequently overlooked; so much so, that the laity seems to have gained the idea that a little infant can not have genitourinary trouble. Frequently a vulvovaginitis is neglected, though quite startling to the physician who has had experience with baby girls. It is often with considerable difficulty that one can secure the cooperation of the parents in the proper treatment of a vulvovaginitis. Routine examination of urine from little babies is not at all out of place, and occasionally bears fruit in explanation of some otherwise inexplicable rise of temperature.

DR. EDWIN E. GRAHAM, Philadelphia, agreed that these cases are often overlooked, and that routine examination of the urine in infants is most valuable. He has been struck with the fact that in children over 2 years of age there often is a history of cystitis, the child having evidently suffered from mild cystitis for perhaps a week, several weeks or a month before the development of the fever and marked symptoms. In these cases of pyelocystitis or pyelonephritis that he has studied, the element of pain is distinctly more marked than Dr. Abt gave the impression. This is especially true in the older children. Children 3 or 4 years of age may have severe pain, and these children commonly refer the pain to the abdomen and not to the region of the bladder. Of course, he said, everything depends on the urinary analysis, and catheterization of these children, almost all of whom are females, is not difficult. The question in Dr. Graham's mind is whether if these cases were followed a nephritis would be found. Most of these cases show a large amount of pus, occasional casts, commonly granular, and a mistake that pediatricians make is in not following these cases of urinary infection for a sufficient length of time. Dr. Graham believes that some of the cases of nephritis in older children are cases where a mild degree of nephritis existed in earlier life and an apparent cure has taken place. In regard to the prognosis of an acute attack, his experience has been similar to Dr. Abt's. The best treatment is hexamethylenamin, salol and the alkalization of the urine in those cases where it is usually acid.

DR. J. L. MORSE, Boston, Mass., stated that everyone who examines the urine of babies as a routine measure finds pyelitis frequently. As to the etiology, he has recently seen a case of pyelonephritis the result of the present epidemic of unnecessary circumcision. In his experience these cases usually run a pus temperature. He has found marked loss of appetite a common symptom, although he has never heard it referred to by others. In his experience recrudescences are very common and, as a rule, occur without any apparent cause. Pain is more common in the recrudescences than in the beginning. A possible explanation of the pain and recrudescence, he said, is a plugging of the ureter with masses of pus. His cases have been more obstinate than Dr. Abt's, and he always expects them to run a long course. He has found hexamethylenamin the most useful drug in about the same doses as recommended by Dr. Abt. Unfortunately, however, he has seen a number of babies who could not take it. He has at present a baby under his care who did not yield at all to the ordinary treatment of this condition. The urine was withdrawn under sterile conditions, a pure culture of the organism obtained, and an emulsion of the dead bacteria prepared. She improved very quickly and markedly after a number of injections of the emulsion of the dead bacteria. It seems to Dr. Morse that there is much to be hoped from the treatment of pyelitis, as of other cases of chronic suppuration, by the use of injections of dead bacteria.

DR. E. W. MITCHELL, Cincinnati, has had great satisfaction from the use of methylene blue, in doses of 1/3 gr., t. i. d., in adults. He has had occasion to use it only once in a child. In that case he gave 1/6 of a grain t. i. d., and the case apparently cleared up much more promptly. His experience conforms to that of Dr. Morse that pyelitis drags along a considerable time, whatever remedies are used.

DR. J. H. M. KNOX, JR., Baltimore, Md., said that the complication of intestinal disturbances occurs much more frequently in Baltimore than one would suppose. Frequently he has seen five or six cases in a single season among diarrheal disorders. In one case of chronic ileocolitis the temperature corresponded closely to the chart of Dr. Abt. The patient improved and the temperature subsided at first, but then became irregular, the urinary examination showing large quantities of pus in the urine. In this case sterile specimens of urine were taken every day or two. The patient was about 18 months old. Colon bacilli were found, varying from 10,000 to 60,000 or more organisms to the c.c. The child was put on hexamethylenamin and to a certain extent it had the effect that Dr. Abt mentioned. Following its administration, the number of bacteria was reduced to a few hundred. The child died some weeks later. At the autopsy little change was found in the urinary apparatus; no indication of cystitis; none of urethritis; a little dilatation of the pelvis of both kidneys, and some injection. There was almost no thickening of the membrane at all. Further examination of the large intestine showed the mucosa to be beefy red and much thickened. It seemed to suggest that in this case, at least, infection came not from the lower urinary passages, but directly from the superimposing of the thickened large intestine on the kidney, or through the blood.

DR. L. BOORSE, Milwaukee, Wis., observed one symptom in one of his cases that Dr. Abt did not mention. In a child,

7. Arch. of Pediat., April, 1907.
8. Wis. Med. Jour., 1905-1906.
9. New York Med. Jour., Oct. 20, 1894.

15 months of age, suffering from colicystitis, there were manifestations that seemed to indicate distinct rigors. These attacks recurred a number of times, at intervals of a day or two. Dr. Boorse has also elicited, in several cases of colipyelitis, pain on pressure over the region of the kidneys. In his experience these cases have usually run a protracted course, extending over a period of three or four weeks. His treatment has consisted in the use of hexamethylenamin, and in some cases, citrate of potash. The former has seemed to be more efficacious in an acid than in an alkaline urine.

DR. ISAAC A. ABT, Chicago, expressed pleasure at having heard Dr. Graham's reference to the occurrence of pain among these patients. He has always felt doubtful as to whether the little babies really had pain and, in consequence, the fretfulness. If older children, similarly sick, localize pain in the region of the kidney, it might be concluded that infants suffer in the same way. Dr. Abt said that he has never been inclined to administer drugs which would change the chemical reaction of the urine. It appears to him that an acid urine is more resistant against severe forms of vesical infection than an alkaline urine. In reference to the occurrence of urinary infection after intestinal cases, Dr. Abt was so thoroughly impressed by Escherich's original article, in which he speaks of colicystitis occurring after follicular enteritis, that he almost always endeavored to get a history of bowel disorder, but, in the largest number of cases, was unable to establish the relationship. Dr. Abt thought that there seems to be some difference of opinion as to the duration of the cases. A few of his cases lasted more than three weeks. In some there were apparent cures followed by relapses in a month or two, and many of the severe cases got well in ten days or two weeks. As a general thing most of the cases which were treated promptly were of short duration.

ESSENTIAL INSUFFICIENCY OF THE HEART IN CHILDHOOD.*

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For some years past, in the routine examination of a large number of children, my attention has been attracted by the frequency of occurrence of a group of symptoms for which no explanation is to be found in the literature. These symptoms, hardly sufficiently numerous or conspicuous to be termed a symptom-complex, are both subjective and objective.

The inconspicuous character of these symptoms cause them to be easily overlooked unless particular sympathy is extended to the complaints of the child or unless careful and interested effort is made to discover the cause of certain conditions with which the symptoms are often associated.

The notes of my observations on this condition, begun a number of years ago, were entitled "A Plea for the More General Recognition of Muscular Insufficiency of the Heart in Childhood." This I think expresses well at the present time the object of this paper.

This condition I regard as a muscular deficiency of the heart comparable to muscular deficiency elsewhere in the body. The term essential is employed merely to distinguish the condition from the muscular deficiency due to well-defined organic disease.

The development of the heart is always a relative one and should correspond to demands made on it by the growing body. The growth of the heart, as of any other muscle, requires time. If it is not given this time it can not respond to demands on it for increased work. Its continued failure to respond to such demands constitutes a relative insufficiency. Under these circumstances the heart does not keep pace with the growth of the body as a whole.

The balance between the body development and heart competency is a constantly changing one. Even the functional internal organic demands on the heart vary considerably from time to time; yet, while fulfilling these duties, which we may term of ordinary character, the heart must adapt itself to the ever-increasing extension of territory it has to supply and, at the same time, answer extraneous and extraordinary demands of the most erratic and irregular character, depending on the increasing physical activity of the growing child. How erratic and extraordinary such demands may be we may understand when we consider the character of the physical exertion of the average child.

The aggregate of these innumerable demands at any time may exceed the potential ability of the heart, and its only partially successful response is the result.

At another time the heart is permitted, perhaps by what we may well term some providential illness or accident, with the accompanying compulsory physical and mental rest, to catch up with the growth of the body as a whole so as ultimately to be able to fill all systemic orders, whether intrinsic or extraneous, constant or inconstant.

One reason why the aggregate of demands on the heart may sometimes exceed its power to respond lies in the fact that the general bodily development is neither synchronous nor symmetrical. The various parts of the organism and their functions develop in different degrees and at different times. Yet each and every part is directly dependent on the heart both for its development and for the subsequent performance of its function.

Were the development of the body gradual and uniform and the demands of its functional activity regular and consecutive, the heart would be able quietly and progressively to adapt itself to its increasing duties. Instead of this being the case, it is called on at times, suddenly and in the most erratic manner, to answer the imperative demands of a great many functions at one and the same moment. It is thus called on to fill an order which it has not prepared itself by training to meet, and consequently it partially fails. The heart muscle itself is incompetent, in other words, to meet the total demands of the moment. Its partial failure means temporary distress, pain, difficulty in breathing, cyanosis, vertigo or syncope. Its complete failure to meet the exigency of the moment, of course, means death. This we see not infrequently in adults, among apparently well and robust individuals, as a result of ill-judged or ill-timed physical exertion, to which the heart is unable to respond at that particular moment. If in the adult we see evil results follow absence of good sense and judgment, what can we expect in the child?

Although death rarely follows the ill-judged exertion and overstrain of an insufficiently developed but otherwise normal heart in childhood, yet the insidious results on the growing organism of the child of many repetitions of undue heart stress may be serious and permanent. Even in the child death may result, as in the case of a child who got up from the dinner table, took her jumping-rope, tried to jump a hundred times without stopping and fell dead in the act. The child uses no discretion in its expenditure of physical force. As is well known, a child will often endure great physical discomfort rather than interrupt its play.

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The symptoms manifested by the children referred to are both subjective and objective. In the one case the former, in another instance the latter, predominate. They are: Pain on moderate exertion, referred in the majority of instances to either the right or the left hypochondrium or lower mammary region, sometimes, though rarely, referred directly to the precordia, less often to some other portion of the chest, and occasionally in little children referred to the abdomen; shortness of breath on moderate physical exertion, such as mounting one flight of stairs, or a slight ascent, or hurrying a short distance to school or on an errand, or during moderate gymnastic exercises, cyanosis under similar circumstances and sometimes persisting in the intervals between such exertion, seen especially in lips, face and fingers; and coldness of the hands and feet.

Examination of the heart in many such cases shows nothing that present methods demonstrate as abnormal. In a few cases slight enlargement of the area of absolute cardiac dulness can be made out, especially by very careful stethoscopic percussion. In a few cases there has been some irregularity of the rhythm and force of the pulse. This, however, I have seen many times in children without these symptoms, so I am not inclined to ascribe too much weight to it in this condition.

Such are the immediate and more obvious symptoms observed in these children. More remote and less invariable, but even more striking in a considerable proportion of these children is the deficient physical growth. This backwardness in physical development is not observed much before the eighth or ninth year and is most noticeable, in the children I have seen, between the eleventh and thirteenth years. Many of these children show a discrepancy of from two to three years between their actual and their apparent age. I wish to emphasize the fact that this, while common, is by no means invariably the case, for this fact I think answers the possible claim that the symptoms of defective heart power are necessarily the effect, not the cause, of the defective nutrition and physical development. Some of the children show no deviation from the standard for their age. This is possibly because in such cases the relative insufficiency of the heart has not been especially existent until the beginning of the second period of maximum intensity of growth in the child, namely, between the twelfth and fifteenth years. In other words, the heart in these children has been able, in the earlier years of childhood, to meet the demands made on it with a fair degree of success, or at least without that degree of failure that leads to stunting of the physical development.

Unfortunately it has been impossible to ascertain with any degree of accuracy just how long these children have been subject to the symptoms. It is impossible, therefore, to say whether the condition is more common or pronounced at a later period in boys than in girls, corresponding to the later second period of maximum intensity of growth of the boy.

As to the relative frequency of the complaint in the two sexes at this period of maximum intensity of growth, my impression, from my notes and from the observation of between two and three hundred cases, is that the condition is somewhat more common in girls. Previous to this period not much difference in its prevalence in the two sexes is noticeable.

The symptoms in these cases are not characterized by features that make necessary the detailed recital of individual instances. It is sufficient to say that the number of cases seen leads me to believe that the condition is common.

Decidedly striking in these children is the effect of an attempt at the ordinary activity of childhood in play and games. Whereas fairly strenuous play in the open air brings to the cheeks of the normal child a healthy rosy glow, in these children often after such play the flushing of the cheeks is of distinctly cyanotic hue. They are not infrequently obliged to desist from such play long before their companions. Exposure to a cold wind also produces in the cheeks and in the hands the same livid hue.

This muscular deficiency of the heart, if we may so consider it, is in itself alone comparable to muscular deficiency elsewhere in the body, but when we consider its ultimate results it becomes of infinitely greater importance than muscular deficiency anywhere else in the body. Persistent inaptitude on the part of the heart to fulfill its task of necessity results in time in evident defect in the building of the structure it serves. Such defect may be observed by everyone who has had under observation many cases of organic cardiac disease in children. I believe, however, that it is not essential that we have a definite organic lesion in order to have all the secondary symptoms of deficient heart, as well as many of the remote results of such deficiency, when long persistent, on the growing body.

The results of simple insufficiency of dynamic power of the heart may be quite comparable, in kind though not perhaps in degree, to those seen in valvular lesions when congenital or acquired early in life.

The importance of the symptoms mentioned is not generally recognized by the family physician. The reasons for the ignorance of this condition are many: First, the patient is a child and hence is not given by the average physician the same degree of attention that he would devote to an adult with similar complaint; second, the general practitioner considers the child to be possessed of an unlimited power to "outgrow" everything; third, the fact that the symptoms are somewhat inconspicuous to the casual and uninterested observer; fourth, the parents themselves are slow to realize that anything is wrong with their children; fifth, the children themselves frequently, after an occasional initial complaint, learn the futility of such complaints and complain no more; and, sixth, because the often very obvious defective physical condition of the child is usually attributed to some error of hygiene or diet so easily found in the life of the average child. That this is not without some influence is very true, but I believe that a very material part of the influence of such violations of physiologic law is exerted on the heart and manifests itself, in the cases of which we are speaking, in deficient dynamic power, with the resultant immediate and remote effects of such deficiency.

I have been particularly struck by the impossibility of inducing the family physician in such cases to take any interest in these children. Not infrequently I have been told by the parents, with an air of superior wisdom, that their physician said "there is nothing the matter with the child." Regardless of what the cause of this condition may be, and ignoring the subjective complaint, and looking at the matter from a purely mechanical standpoint, such an opinion is in direct contradiction to the objective examination of many of these children. An engineer who persisted in asserting that there was nothing the matter with his engine, in the face of equally obvious faults in the mechanical working

of the machinery, would promptly lose his job. What the physician really means when he forms this opinion of the case is not that there "is nothing the matter" but that because he can not explain what is before him on the basis of an organic lesion, he assumes that it can not be of import. Had he found a loud souffle anywhere over the heart he at once would have assured the parents that the child had "heart disease," and probably he would have written a prescription containing digitalis, happy in the thought that he had just seen a case typical of this or that lesion described in his text-books. Otherwise, however, he ignores, often obtrusively obvious evidence of insufficient heart, in the shape of both objective and subjective symptoms, cyanosis, dyspnea and pain.

The usual negative results of precordial examination are also responsible for the general ignoring of this syndrome by the general practitioner. Such absence of local cardiac physical signs should deceive no one, if he keeps in mind the principle of paramount importance in the diagnosis of cardiac lesions in either adult or child, that symptoms are of more consequence than physical signs and that the character of the actual secondary results of any heart defect should be given far more weight than the apparent result of the precordial examination, in the diagnosis of the existence or character of that defect.

In a case of deficient physical development and coexistent pronounced valvular defect, it may be assumed, in the absence of other pathologic factors, that the heart is responsible if it can be proved with reasonable assurance that the heart lesion dates back a sufficient period to make it possible that it so impaired the heart's function that the body nutrition suffered month after month and year after year.

I believe it is as reasonable to assume that a relative muscular insufficiency of the heart, that is, a heart inadequate to the nutritional and functional requirements of the growing body, may have on the body growth the same stunting effect.

Not all the children with the symptoms enumerated present these symptoms in equal degree. Some complain of pain and a certain amount of dyspnea, without showing much of any cyanosis even during moderate physical exertion. Others complain but little of pain but are obliged to desist from play on account of dyspnea and show considerable cyanosis, sometimes evident for a considerable time after exertion.

In the class of children with which this paper deals belong, I believe, those cases in which gymnastic exercises, particularly when of competitive character, are followed by symptoms of cardiac failure.

With just what etiologic factor have we to do if we assume, as seems, reasonable, that these symptoms are due to muscular cardiac weakness? Is the condition purely a deficient development of the heart, deficient relative to the more rapidly advancing development of the rest of the body, or may it perhaps be due to actual pathologic damage done to the heart by some unsuspected event in the child's life? It is not possible to answer this question positively at the present time. It is my belief that every infection, every toxemia, affects the cardiac muscular and nervous structure to a certain degree. It seems reasonable to believe that affections hitherto regarded as almost universally benign may produce degenerative organic changes of greater or lesser degree. Such apparently trivial affections as varicella, rötheln, parotitis and tonsillitis, infectious colds and influenza may be included here. I have long believed that such is the fact with regard to renal lesions of which the apparent origin occurred in late childhood or earliest adult life. I believe, therefore, that it is our duty to educate all who have the care of children to cultivate more respect for what appear to them (and also to not a few of the medical profession) as trivial incidents in the life of the child. The greater the care of these slight ailments, and the greater the solicitude manifested by nurse and physician during the convalescence from any of the infections of childhood, the less will be the organic damage, the effects of which may appear in the late years of childhood and adult life. If convalescence is prolonged and the period of physical rest is carried considerably beyond the point where the child appears to the layman to be well, then these diseases, intercurrent in the course of the development of the human being, may not only do no permanent harm, but may even prove to be blessings in disguise by virtue of the enforced physical rest for which they give excuse.

Many times I have been able to observe and to confirm the truth of the idea that prevails among some parents now, and was formerly believed by certain old-time physicians, that after a severe acute illness a child's health is sometimes "better than ever before." I can substantiate this belief, and believe it is chiefly true of patients in the latter half of childhood, preceding and during puberty. That this should be so is an apparent paradox, but is due, I believe, to the fact that during the long convalescence and the coincident bed rest the heart has time, during its relative rest, to recover itself, to gain increased power, and to adjust itself to the new conditions and enlarged sphere of action demanded by the growing human being.

This gives us our cue for the treatment of these children. Rest, absolute at first, combined with massage and warm carbonated saline baths and, in the case of older children, resisted movements, and, at a later period, graduated physical exercises under control of physician and nurse. In other words, I advocate for these cases the same treatment that I employ in the case of a heart incompetent from demonstrable organic cause.

How difficult it sometimes is to secure the willing and intelligent cooperation of the guardians of the child all know who have attempted to carry out the rest treatment for organic renal or cardiac disease and for certain nervous affections of childhood. Contrary to the general belief, the difficulty does not lie with the child. I have never failed in obtaining a reasonable measure of success in carrying out the plan when I had the cooperation of the mother. Sometimes, however, the indifference of the parents or their lack of will force in the control of their children will prevent success, but in my experience we are far more often handicapped by meddlesome relatives and false friends of the family. This is well illustrated by an incident that occurred while this article was being written. The mother of one of my patients, a little fellow of 6 years with a double valvular lesion of the heart, mitral and aortic, was accosted on the street by one of her friends (?) with the words, "I hear that on the advice of that Boston doctor you kept your little boy in bed for weeks; the poor dear little fellow. Why, you are killing him." The mother, fortified by weeks of experience, smiled politely and answered, "Won't you call some time and see what a lively dead boy he is?" When he was put to bed the "poor dear little fellow" had a pulse of 130, respiration 40, labored and with action of all the accessory muscles of respiration, marked cyanosis, and beginning cutaneous

edema and albuminous urine. At the time of the interview he had a normal pulse and respiration, no cyanosis, edema or albumin, and nearly every day went to walk with his mother, sometimes climbing a hill of three-quarters of a mile of considerable grade in the course of the walk.

OBSERVATIONS ON MALFORMATIONS OF THE RECTUM AND IMPERFORATE ANUS.*

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I shall not present a monograph in twenty minutes; but shall pass by history and classifications and also the simple cases in which a membranous septum closes the anus and which are comparatively easily managed. Your attention will be directed for a moment, however, to one rather simple case, so far as treatment was concerned, in which the configuration was peculiar (Fig. 1).

This case was referred to me by Dr. I. W. Bard. A depression marked the proper site for the anus, as is not uncommon (though in imperforate anus, even with a raphe, the perineum is usually smooth); but across this depression extended forward a tapering tail-like process from the coccygeal region which continued into the raphe of the scrotum, dividing the little cuplike cavity of the proctodeum into two lateral halves.

This is a fairly marked example of a comparatively rare malformation. A few others of its kind have been reported in which the anal depression reached the rectum, but left a central bridge across the opening. They seem to contradict the usually accepted view that the ectodermal layer simply dimples in until it meets the terminus of the enteron. It rather confirms the description of Tourneux, that there is a definite anal membrane or specialized cellular mass thicker in the middle line than at its sides, forming the anterior wall of an internal cloaca, or rectal ampulla; and that this cellular body is absorbed away, the greatest absorption taking place at each side of the central line, where the thicker portion remains last to be absorbed and, in such malformation as this, fails to be absorbed.

In this case there was restlessness, distress and moderate straining and refusal to take the breast, but no vomiting. Patient was operated on at St. John's Hospital. Dissection in the median line extended upward a distance of about three-fourths of an inch; encountered and opened the rectal ampulla, and discharged the meconium, to the great relief of the infant, which seized the mother's breast at the first opportunity. There was no appearance of any fibrous cord extending from the anal site to the rectal pouch, as is often described in the books; and in a number of cases that have come under my observation I have never seen such a cord and think it must be unusual.

I was particularly impressed in this case with the advantage of operating without an anesthetic. In the absence of expulsive efforts the exploring finger gains no sense of proximity of the distended pouch. But during straining the increased tension is at once communicated, even through a considerable thickness of tissue. Pressure of the hand over the hypogastrium will simulate straining, but, the diaphragm not being fixed, it is not so effectual. This case, after one simple incision and evacuation, followed by use of bougies daily for ten days, resulted in a functional cure as complete as one could wish, with perfect control. Thus my fears, taught by previous experience and reading, that simple incision of a septum of that thickness would be followed by cicatricial contraction, failed to be realized. Usually if the impervious portion necessarily cut through be more than a membranous septum, or if it be only a septum but situated at some distance from the surface, it is necessary to bring down the pouch and stitch it to the freshened edges of the skin at the anal margin, thus securing a mucous lining to the canal, to prevent recontraction.

Since writing the above I have again visited this patient, eight months after the operation, and found a fine, well-grown baby said to have normal, healthy stools. On examination, I found the anus rather small, admitting only the end of my fourth finger, and rather rigid. In case of constipation there might be trouble. But what especially struck me was the fact that the rectal cavity was encountered at a depth of a half inch or less, as though a process of development since birth had brought it nearer to the surface. There are one or two cases on record in which, after inguinal colostomy, the blind end of the gut went on developing downward so that later it could be easily reached by the perineal route.

But I wish now to relate two cases of severe malformation of the rectum.

The first case was seen March 24, 1903, in consultation with Dr. Etienne P. Crowe, accoucheur. Male babe of J. C., the father a Scotch-American and the mother a Bohemian. They had one older child, well formed and healthy, and denied all family history of deformities, and any deleterious influence during pregnancy. When seen by me the babe was forty-eight hours old and was said to have urinated, but had no bowel movement, and Dr. Crowe had discovered that no anus existed. In its place was a slight groove. The infant appeared of average size, fairly plump, and well-formed, excepting that there was a median cleft partially separating the scrotum into two lateral halves, with a testicle in each. At the bottom of this cleft, half an inch posterior to the penoscrotal junction, were two small orifices. One of these extended only skin deep, the other deeper. It was said that a half dram of blackish fluid had been found on the diaper and that the scrotal cleft had been stained with the same material. With a small probe and with a filiform bougie a persistent effort was made to trace the course of the deeper sinus, as I thought this the key to the situation, but could penetrate little more than an inch without danger of making a false passage. While inspecting the parts a small amount of gas escaped from one of the orifices. The sinus ran in the same direction as the urethra, but posteriorly to it. The urethra was patulous and the urine was not stained with meconium. Therefore, an opening between intestine and bladder was excluded. A probe passed into the bladder revealed no greater encroachment of abdominal viscera in any one direction. Dr. Crowe and Dr. Propper had made an attempt to find the rectum by making an incision through the perineum in the median line three-fourths of an inch long and one and one-half inches into the pelvis without finding the gut. A finger introduced into this incision could feel urethra, prostate, and bladder, but no gut, and no tension during straining. The distension of the abdomen was pitiful. It appeared ready to burst; while the entire surface of the infant was purple from interference with the venous return. I noted that this stasis seemed a little greater in the right lower extremity; but the abdomen was equally distended on both sides. There was no fecal vomiting. The pulse could hardly be counted.

The condition appeared so urgent that I decided to abandon the perineal route and open the abdomen. I operated at the house. A few breaths of chloroform were given; made an inch incision of a particularly prominent portion of the left inguinal region. A few drams of amber-colored fluid escaped.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

No ampulla and no colon could be reached; but a greatly distended loop of small intestine made its appearance in the incision and was stitched into its margins, packed round with gauze and opened. Quantities of flatus and some half-digested flakes of casein escaped from the opening. The distension on the left side of the abdomen was relieved, but not that on the right. We considered the advisability of opening the right side, but the parents refused point blank to allow anything more to be done. The infant stood the operation nicely and appeared relieved. The pulse counted 160. Ordered a few drops of brandy with water every hour.

The babe passed a very uncomfortable night. Next morning the parents refused to allow even an examination. With great effort we obtained the privilege of looking at it without removing it from the bed at the mother's side. It was grunting with pain and the pressure against the diaphragm. The artificial anus had discharged some more of the bowel contents, but not a great deal. The abdomen was greatly distended, being painfully tense on the right side, especially in the cecal region, and the skin on the abdomen and right lower extremity was turgid. Dr. Crowe and I expended our combined logic and eloquence on the parents. They were absolutely obdurate against further interference. The babe died that evening, thirty-two hours after operation.

By the greatest effort imaginable, Dr. Crowe secured for us the privilege of an autopsy next morning. The weight was seven pounds and four ounces, length twenty-one and a half inches, length of upper extremities eight inches, and of lower extremities seven and three-fourths inches. From umbilicus to heel ten and one-fourth inches; circumference of head thirteen and one-fourth inches, of chest thirteen inches, of belly sixteen and one-fourth inches, showing the babe to be of average size and general development. Distension general over abdomen, with veins of skin full. Distension more tense on right side. On opening the abdomen the perineum was found congested, like the skin, and its cavity contained more fluid than normal, of an amber color. Bladder extended as high as two-thirds of the distance from os pubis to umbilicus, but was empty. Intestines distended with gas, as well as meconium. The cecum, with the appendix behind it, was located half way from the umbilicus to the cartilage of the ribs, right side (Fig. 3). Thence the colon extended transversely to the left, made the splenic flexure, then turned to the right and crossed the abdomen at the level of the umbilicus to a large pouch which occupied the usual position of the cecum. It had a gangrenous patch seven-eighths of an inch in diameter, which burst open as soon as touched. This large pouch, which terminated the colon and occupied the cecal region, extended beyond the median line and was closely attached to the bladder. It was rounded in outline, but came to a funnel-shaped tapering end in proximity to the neck of the bladder, at the right and posteriorly to the urethra. The funnel point extended toward the canal opening in the scrotum, with which I believe it was continuous, although patient efforts failed to pass the smallest canaliculus probe from one opening to the other. There was about half an inch impenetrable. The inferior surface of the right lobe of the liver presented forward, the anterior border being turned upward behind the ribs. The stomach was normal in shape excepting that its pyloric end, like the border of the liver, was turned upward by the pressure of the intestines.

The second history I wish to relate is that of Baby S. S., male, of Jewish parents, their fifth child, all the others being normal. On the second day after birth the midwife, who was also the nurse, made the discovery that the babe had no anus. A neighborhood doctor was called. He made a small scratch with scissors at the site of the anus and advised the people to wait till next day and take the babe to a dispensary. But I was called on the third day. The babe had not at any time taken the breast nor any drink nor passed any stool. It was said to have urinated and that the urine was clear. No vomiting. He appeared rather under the average size and weight. His abdomen was greatly distended and tympanitic. He was feeble and apathetic. Straining was very moderate and at long intervals and only excited by manipulation of the abdomen. The skin was cyanotic from pressure within the abdomen, and was also jaundiced, the combination giving a very peculiar color. The epidermis was exfoliating heavily. There was no dimple or depression at the anal site. A raphe was indicated by the structure of the skin, but was not raised above the smooth surface. There appeared to be no deformity of the pelvis or close approximation of the ischial tuberosities, as is said sometimes to occur. The parents were of the opinion that God never intended that the child should live or He wouldn't have made it that way, and they were very anxious He should take it off their hands. The midwife declared no such child ought to live and she knew this one would not. I mention this to indicate the kind of care it was getting and was likely to get.

I persuaded them to take it to St. Clair Hospital, where I operated on it at once, without anesthetic, dissecting in from perineum. Having passed through the floor of the pelvis, I used a blunt dissector and then my fourth finger between bladder and sacrum, a distance of two inches, but felt no gut nor any bulging on straining. The babe seemed so debilitated that extensive dissection by the pelvic route seemed inadvisable, and I decided to at least try to give relief by opening the abdomen. I drew the attention of my class to the fact that the distension of the abdomen was larger on the right side than on the left, and remembering the previous case, I felt considerable hesitation in choosing which side to open. Under a very little chloroform, for fear of adding to the depression of the stercoremia and the jaundice by anesthesia, I incised the skin and fascia, two or three finger breadths (of the infant) above the middle of Poupart's ligament on the left side, and separated the muscle layers. Going through the abdominal wall, I found my opening at once into the gut, there being no peritoneal cavity between the parietes and the bowel. This seemed very odd. Using finger and probe, I decided that the cavity entered was the rectal pouch near its lower end, blended with the abdominal wall. Great quantities of gas escaped, and also a dark fluid, not as dark or thick as meconium usually is. I sutured the layers together around the opening, which made a very good artificial anus. Dressed with abundant gauze. The cyanotic hue disappeared from the skin. Soon the effect of the chloroform passed and the babe at once took brandy and water and later an ounce of water with a dram of coffee. During operation hot water bags were used and all possible protection from cold and shock. The parents insisted on taking him home at once, on a wintry day, and the nurse, who staked her reputation on a prediction that he would not live, carried him off. He died in fifteen hours. No post mortem allowed.

Reflecting on these two cases, I think they show, for one thing, the necessity of early discovery of the presence of malformation and prompt surgical interference; for there is no possible chance of life otherwise, and waiting only produces more distension and exhaustion, allows time for the meconium to become septic, stercoremia to ensue, and for the development of jaundice, peritonitis, gangrene, rupture of the colon or other complication. An examination of the infant should be made at its birth as to the normal development and the integrity of all its parts.

It seems strange that fecal vomiting is not a more common symptom in these cases. It is said to be unusual. The rare cases which survived more than seven or eight days, sometimes several weeks, have had periodical fecal vomiting, but they are so rare as not to count in the prognosis.

These cases illustrate, too, the impossibility of ascertaining in cases of imperforate anus, before operation, the degree of development of the rectum or the location of the enteron. In both cases the abdomen was distended and the skin of the body and lower extremities was turgid. In the first case the terminal pouch was located on the right side, and in the second case, although the right side of the abdomen was more dis-

tended than the left, the pouch was located on the left. However, in the first case the venous stasis was somewhat greater in the right extremity than in the left, but as both were much congested and it was only a matter of degree, I did not take it as a guide. Perhaps it was an index I should have valued more. Greater venous stasis, regardless of greater abdominal distension, may be as valuable a clue to the location of the pouch as it would be of any tumor. But the tympanitis and distension being the same on both sides, I considered the probability of the colon's ending on the left side—and on going in there, missed it. In neither case did examination by the sound in the bladder prove of any value in determining in which direction the distended pouch was situated.

Certainly in the first case, if I could have succeeded in passing a probe through the sinus, I could have located the pouch. That being impossible, it is debatable

Fig. 1.—Imperforate anus with a tapering tail-like ridge extending forward from the region of the coccyx, dividing the cup-like cavity of the proctodeum into two lateral halves.

Fig. 2.—Malformation of rectum. Anus absent. A groove partly divides the scrotum in the median line; in the groove near the penoscrotal junction is the orifice of a sinus. Note the distension of the abdomen and discoloration of the skin.

ground whether, if the infant had been in good condition to endure extensive dissection, it might not have been well to follow the sinus as a guide and dissect in until the pouch was reached, or to pursue the perineal coccygeal or sacral route. The situation of the orifice of the sinus was not suitable for an anus, yet if once the pouch were located and a temporary canal for evacuation established, an attempt could have been made afterward to establish a permanent artificial anus in a more suitable location.

But I think if a case of imperforate anus or malformed rectum, without a pervious sinus, were to come to me to-day in a fit condition for operation, I would persist in the perineal, coccygeal, even a sacral route, separate and drag down the pouch if possible and stitch it to the skin margin. Yet in the first case even that procedure, I fear, would have proved impossible of execution on account of the distance at which the pouch was located.

In a case like the second, it probably would have succeeded if performed early with the patient in good condition at the start. But after waiting till the third day, in the presence of exhaustion and jaundice, such an operation would have proved too severe and would have precipitated the fatal result, as was shown by the sequel; for the slighter operation of making an artificial anus, which took but a few minutes' time and with no hemorrhage, and which evacuated the canal and thus gave relief, was followed by death fifteen hours later.

How much the result would have been altered if the patient had had better surroundings and better nursing is hard to estimate.

It is stated by some writers that ano-rectal imperfora-

Fig. 3.—Portion of lower bowel showing pouch-like distension. The specimen is greatly shrunken by the preservative. The enormous pouch occupied the right hypogastrium and terminated in a minute sinus to the right of and posterior to the urethra.

tion is apt to be accompanied by other deformity, especially by contracted pelvis, extroversion of the bladder, spina bifida or nasopharyngeal obstruction; but in none of the cases that I have seen was such malformation present.

In one case of a very puny child with its anus closed by a membranous septum the infant's forehead was wedge-shaped, the frontal bones meeting at an acute angle. The occluding membrane had been opened by Dr. F. J. Morton and the rectum seemed patulous for several inches each time that I examined it.

But the babe persistently vomited whatever was given it to swallow, though it never vomited meconium, and never passed any noticeable amount of meconium from the bowels. It died, apparently, as a result of exhaustion, on the sixth day after birth. Probably there may have existed other occlusion somewhere in the intestinal tract. No operation and no postmortem were allowed.

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DISCUSSION.

DR. L. T. ROYSTER, Norfolk, Va., saw in consultation about eighteen months ago a child with absence of anus—no raphe even was present. Operation was performed under chloroform. One and one-half inches from the skin was found the end of the intestine, which was brought down. The child made an uneventful recovery with well-formed stools. It died a year later of some acute disease.

DR. E. H. SMALL, Pittsburg, Pa., reported a case of imperforate rectum which he saw about four years ago. A baby boy was born under his care, well developed, but with no anus whatever. When twenty-four hours old his condition was good, and with the aid of another doctor a trochar ¼ inch in diameter and 2½ inches in length, was thrust into the perineum where the anus should have been toward the hollow of the sacrum. When it had entered about two inches the rectum was entered, the stylet withdrawn and the meconium gushed out. Then the trochar was withdrawn and the wound enlarged enough to admit the little finger into the rectum. The gut was so adherent to the surrounding tissues that it was impossible to bring it down to be united to the skin. A catheter was introduced and dilatation was kept up with the finger and then with sounds. The rectum gradually approached the outside and a good sphincter was formed. Now the boy has just as good control of his evacuations as any other child. The anus is funnel-shaped and the sphincter about one-half inch higher than normal.

DR. S. W. KELLEY, Cleveland, Ohio, said that these patients die unless operated on. Cases are on record where after operation they have grown up and become useful citizens. He believes that it is safer to dissect than to use a trochar, and that it is better to dissect out the pouch before opening and bringing it down and attach it to the margin of the incision.

CYSTOCELE.*

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PHILADELPHIA.

Cystocele is a hernia of the bladder into or through the vaginal opening. Usually cystocele is described as a prolapse of the anterior vaginal and bladder walls. Cystocele as a separate condition is rarely seen. As a rule it is a part of a complex condition, consisting of a laceration of the sacral segment of the pelvic floor (perineum), with prolapse of the anterior and posterior vaginal walls and of the uterus. In order to understand the nature of cystocele and the operative procedures necessary for its cure a knowledge of the anatomy of the female pelvis and of the nature of the supports of the pelvic viscera is necessary. This knowledge is best summed up in the work of Hart and Barbour[1] on the nature of the pelvic floor, of Schultze[2] on the proper supports of the uterus and their functions, and of Foster[3] on the nature of the anterior segment of the pelvic floor. So long as the gynecologists are not agreed on the fundamental facts it will be impossible for them to agree as to the best means of curing cystocele. It is my own opinion that the tonic condition of the abdominal muscles, intra-abdominal pressure, the proper anatomical supporting ligaments of the uterus and of the bladder each play their rôle in the maintenance of the position of the pelvic organs, but the greatest factor is the integrity of the sacral segment of the pelvic floor or, as it is usually called, the perineum. This is the reason why cystocele rarely exists alone, but is usually secondary to injury of the pelvic floor, and exists as a complication of hernia of the pelvic contents, usually spoken of as procidentia uteri. The exceptions are in cases of marked muscular relaxation of the pelvic tissues, of absorption of the perivaginal fat, of exaggerated intra-abdominal pressure, or a combination of two or three of these factors.

The causative injuries of the pelvic floor involve lacerations of the pelvic muscles and fascia, and later under the influence of intra-abdominal pressure and straining at stool there is overstretching of the fascia. As a result a pouch of the bladder greater or less in size is forced down, together with the anterior vaginal wall, into the vaginal outlet or entirely outside of the vaginal canal.

Fig. 1.—Resection of the anterior vaginal wall complete. Bladder detached from the vagina laterally and from the uterus anteriorly. Deep layer of sutures begun.

If our premises are correct that cystocele, as a rule, is a part of a complicated process, it is quite clear that the cure of cystocele must involve not only restoring the anterior vaginal wall to the normal, together with as much detachment of the bladder as may permit it to rise to its normal position in the pelvis, but in addition the various lesions of the pelvis must be corrected. The proper ligaments of the bladder are of service in supporting this organ, but the bladder itself, together with the uterus, ovaries and pelvic contents, is supported by the sacral segment of the pelvic floor. Another factor of importance is the position of the uterus. Normally the uterus is anteflexed, and increased intra-abdominal pressure merely serves to increase the anteflexion. On the other hand, if the uterus is retroverted, intra-abdom-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty eighth Annual Session, held at Atlantic City, June, 1907.

1. Manual of Gynecology, 1905, p. 58.
2. The Pathology and Treatment of Displacements of the Uterus, 1888.
3. The Mechanical Action of Pessaries, Trans. Amer. Gyn. Soc., 1881, vi, 434.

inal pressure tends to force the uterus down and out the vaginal canal, and at the same time the bladder and anterior vaginal walls are forced down.

Many operations for the cure of cystocele have been proposed since the original proposition of Gérardin[4] in 1823 and the original operation by Heming[5] in 1831. The operations of Sims,[6] Emmet[7] and Hegar[8] are of interest historically, especially Sims' original operation, which was a resection of the anterior vaginal wall.

The chief credit for placing the operation on a sound basis is due to Hadra[9] of Texas, who was the first to recognize that the way to cure a cystocele is to incise the anterior vaginal wall, detach the bladder from the anterior face of the uterus and laterally from the vagina sufficiently to permit it to rise in the pelvis, then to resect the anterior vaginal wall to get rid of the excess of tissue, and to follow this by suturing the anterior vaginal wall to the anterior face of the cervix so that it may become attached and thus prevent the descent of the bladder. Hadra introduced this principle into practice in 1887. Saenger,[10] who did valuable work in this field, gives full credit to Hadra for the principle involved.

The various operations introduced as novelties within the past few years all depend for their success on the principle of the free detachment of the bladder from the vagina and anterior face of the uterus, and some of them would be more successful if the principle of suturing the vagina to the anterior face of the cervix and the uterus were not omitted. The operations of Stone,[11] Dührssen,[12] Goffe,[13] Watkins[14] and Dudley[15] depend for their success on the principle originated by Hadra.

As cystocele is almost invariably associated with rectocele and prolapse of the uterus due to injury of the pelvic floor, and also frequently with retrodisplacements of the uterus, the operations proper for the cure of the associated lesions must always be carried out at the same sitting to ensure a permanently good result. Emmet in his operation attempted to carry the cervix back in the pelvis so as to promote the anteversion of the uterus. The same object is aimed at in the operations of Reynolds[16] and of Dudley, but this purpose can be accomplished more conveniently as a rule either by

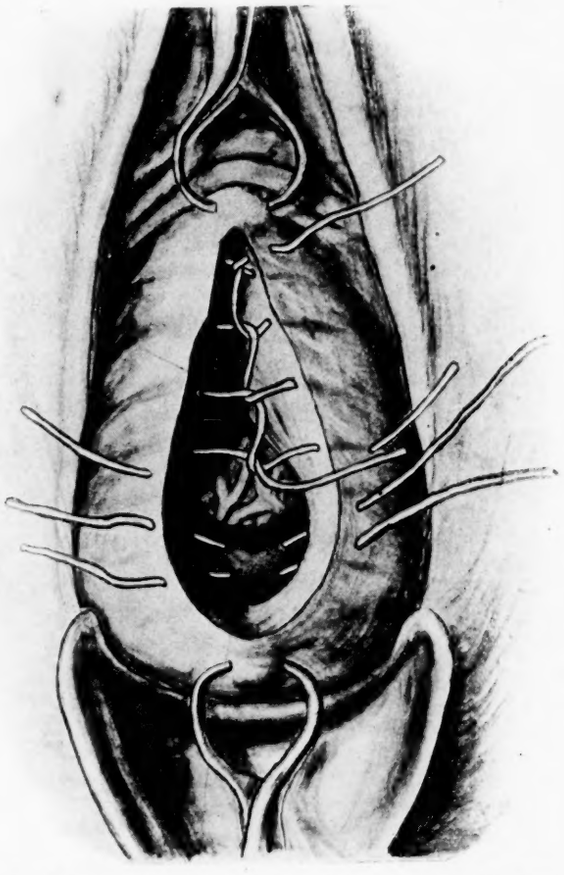

Fig. 2.—Deep continuous suture partly placed. Three interrupted sutures placed to attach vagina to anterior face of cervix as high as the internal os.

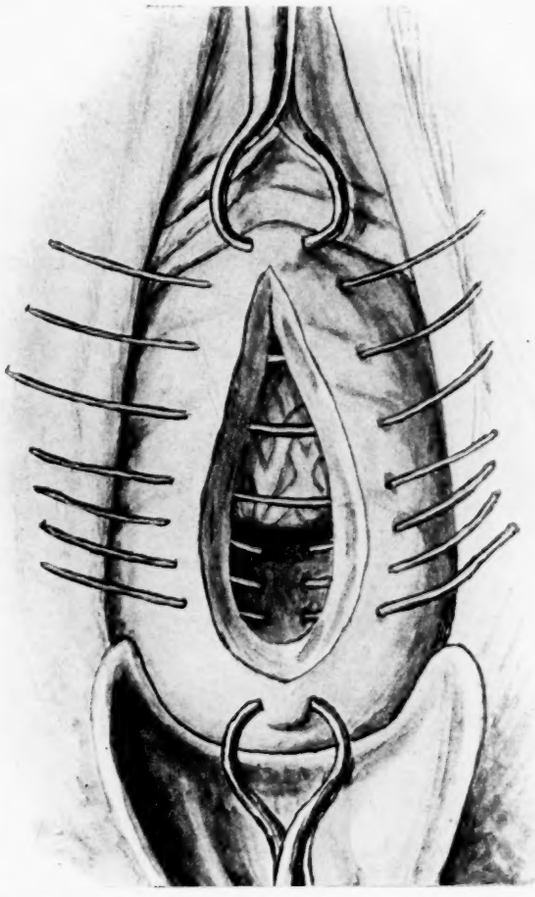

Fig. 3.—Deep continuous and three interrupted sutures placed. The superficial continuous sutures partly in place. Two mattress sutures placed; one tied.

4. Neue Radicalbehandlung des Prolapsus Uteri et Vaginæ bei Frauen in der Periode der Decrepidität, Harless Neue Jahrbücher, etc., x, 1825, p. 151; Gaz. Méd. de Paris, 1835, iii, p. 558.
5. Case of Prolapsus Uteri Cured by a New Operation, London Med. Gaz., 1831, ix, 269. Heming (G. O.): On the Cure of Prolapsus Uteri, London Med. Gaz., 1835, vol. xvii, p. 266.
6. Uterine Surgery, 1886, p. 205.
7. Principles and Practice of Gynecology, Philadelphia, 1884, ii, p. 269.
8. Cyclopedia of Obst. and Gynec., vii, 1887, Handbook of General and Operative Gynecology.
9. Remarks on Vaginal Prolapse, Rectocele and Cystocele, Amer. Jour. Obstet., 1889, xxii, 457; Einige Worte über Cystocelenoperationen, Centrbl. f. Gynäk., 1895, xix, 703.
10. Zur Technik der Prolapsoperation, Centrbl. f. Gyn., 1898, xxii, 2; 33, 1892, xvi, 42, 833.
11. A Method of Anterior and Posterior Colporrhaphy, Trans. Amer. Gyn. Soc., 1902, vol. xxvii, 246.
12. Ueber operative Heilung von Prolapsen der Vagina und des Uterus, Gyn. Rundsch. Wien., 1907.
13. Technic of Pelvic Operations by Vaginal Section, Northwest Med., 1905, iii, 1.
14. Treatment of Cases of Extensive Cystocele and Uterine Prolapse, Surg., Gyn. and Obstet., 1906, ii, 659.
15. New Method of Operation for Restoration of Lacerated Perineum, Amer. Jour. Obstet. and Dis. of Women and Child., December, 1888, xxi, 1233.
16. Repair of Cystocele, Boston Med. and Surg. Jour., clvi, No. 24, p. 774.

shortening the utero-sacral or round ligaments, or by adding a suspension of the uterus to the various other operations indicated.

TECHNIC.

After the uterus has been curetted and the cervix amputated, if necessary, the cervix is drawn down with a volsellum forceps and another volsellum forceps is attached to the anterior vaginal wall near the internal orifice of the urethra. Traction on these two forceps puts the anterior vaginal wall on the stretch. A strip of the vaginal wall is incised with scissors between these two points, laying bare the bladder. The sides of the vaginal opening are then seized with artery forceps for traction purposes, and either with the finger or gauze the bladder is dissected in front of the cervix and an-

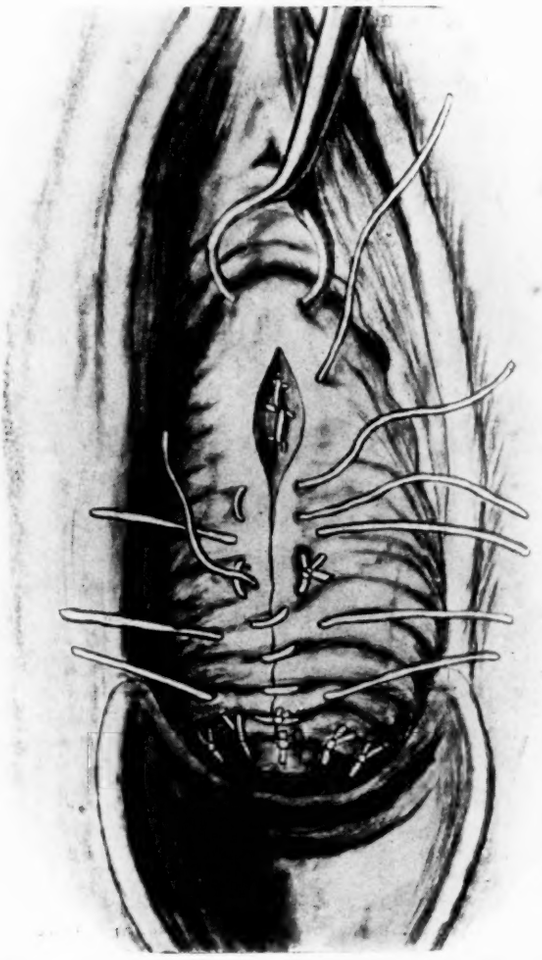

Fig. 4.—Interrupted sutures placed to attach vagina to anterior face of the cervix and to unite the vaginal walls.

terior face of the uterus as high as the internal os or peritoneal reflection, and laterally the bladder is detached from the vagina until it is sufficiently free for the prolapsed bladder to ascend into the peritoneal cavity. The redundant vagina is then excised. As a rule the excised portion is oval in shape, the broader end of the oval being toward the cervix. Care should be taken not to exercise too much, as tendency is to overdo the excision. The operation is completed by two rows of buried half-hitch continuous sutures, the first embracing the deeper layers of the vagina and catching up some of the bladder tissue for the first inch of the incision, and then suturing the deeper layers of the vagina to the anterior face of the cervix. This is followed by a superficial row, with a single tie at the anterior end of the incision. It is well to place two or more mattress sutures of chromicized catgut to take the strain off the continuous row. Or interrupted sutures may be used, in which case the first suture should be inserted at the cervical end of the wound, and each suture should in-

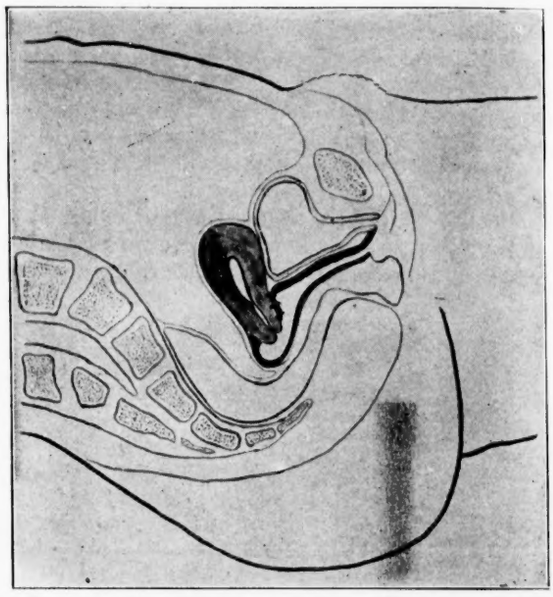

Fig. 5.—Schematic drawing of vagina attached to anterior wall of cervix showing elevation of anterior vaginal wall. Bladder shown partly filled with urine.

clude uterine tissue until a point is reached at or above the internal os, so as to insure the reattachment of the vagina to the anterior face of the uterus and the permanent elevation of the bladder.

A SIMPLIFIED CYSTOCELE OPERATION.*

D. TOD GILLIAM, M.D.
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This operation consists of:

1. An oval denudation of the most prominent part of the cystocele as in the old-time operation.
2. Dissecting flaps from the vaginal wall on either side of the denuded area with which to cover it.
3. Bringing the flaps together over the denuded area and suturing them to it and to each other.

The result is:

(A) The cystocele is effaced.
(B) The site of the cystocele is strengthened by an additional layer of fascia; that taken from the sides.

TECHNIC.

The patient being anesthetized, placed in the exaggerated lithotomy position and the perineum retracted, the first step is to gather up the redundant tissues along the median line of the anterior vaginal wall and mark out the lines of dissection. In my first work I seized the crest of the cystocele with a tissue forceps and applied a light long-jawed forceps at the base of the fold, but later I have dispensed with the base forceps and applied a tenaculum above and below the tissue forceps wherewith to straighten out the numerous little folds on either side the main fold.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

This main, longitudinal fold represents the area to be denuded and is marked off by pulling it to one side and drawing the knife lightly along its base over the median line from within half an inch of the upper end of the fold to within a like distance of the lower end. The details are as follows:

1. Lift up the redundant tissues and by means of tenacula gather them into a longitudinal fold along the median line of the anterior vaginal wall.

2. Make an incision on one side of and at the base of the fold at or near the median line. This incision should extend from within half an inch of one end of the fold to within the same distance of the other end.

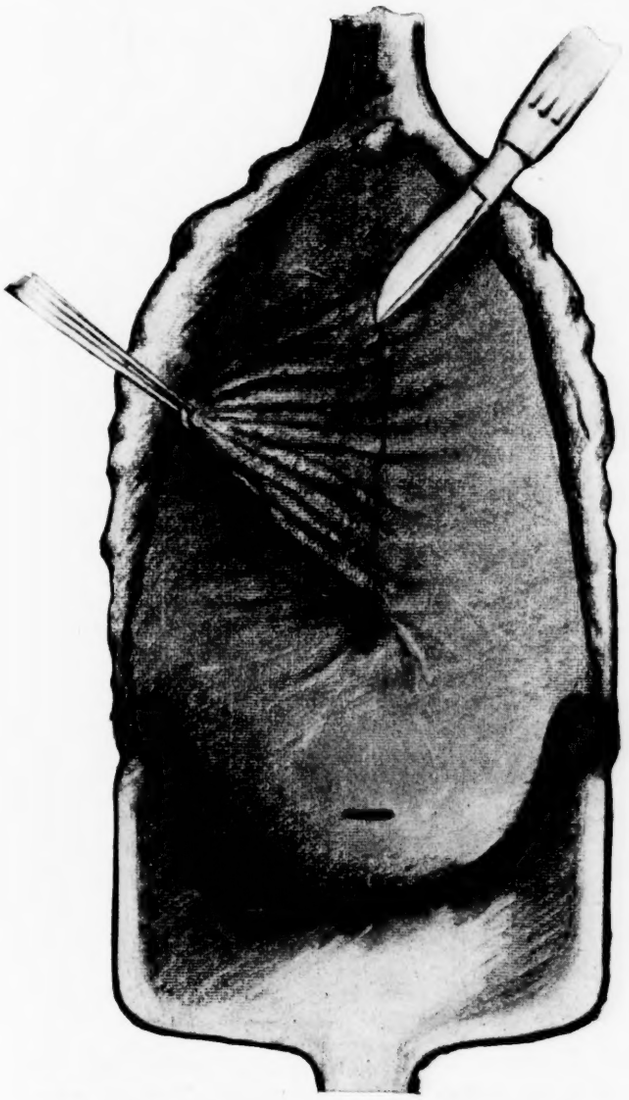

Fig. 1.—Marking out the area to be denuded and the internal boundaries of the flaps which are to cover it.

3. Carry the incision down through the fascia to the muscularis of the bladder.

4. Make a similar incision on the other side of the fold.

5. By blunt dissection separate the bladder from the vaginal wall, from the incision outward to the sulci.

6. Convert the two separated layers of the vaginal wall into flaps by cutting outward from the upper and lower extremities of the incisions toward the sulci.

7. Denude the area between the incisions, but do not remove the fascia.

8. Draw the flaps over the denuded area and suture them to it and to each other from below upward.

It is now pulled in the opposite direction and marked in like manner. These lines also mark the internal boundaries of the lateral flaps. These shallow incisions are now deepened so as to extend through the fascia to the muscularis of the bladder. A sharp knife and well stretched tissues are essential to expeditious work here.

Now, by blunt dissection, either with the handle of the knife, blunt scissors, or the finger covered with gauze, the bladder is separated from the vaginal wall in the direction of and as far as the sulcus and upward and downward the full length of the incision. In making this dissection always keep the dissectors closely applied to the inner surface of the fascia and the latter well on the stretch by properly applied long-handled forceps. It is also well to remember, if the finger or gauze is used, that the bladder must be pushed off the fascia and not the contrary. Usually this dissection in this location is very easy and gives rise to little embarrassment, even to the inexperienced. To the latter I would say: Make your first incision carefully till you come to muscle tissue, and the rest is smooth sailing.

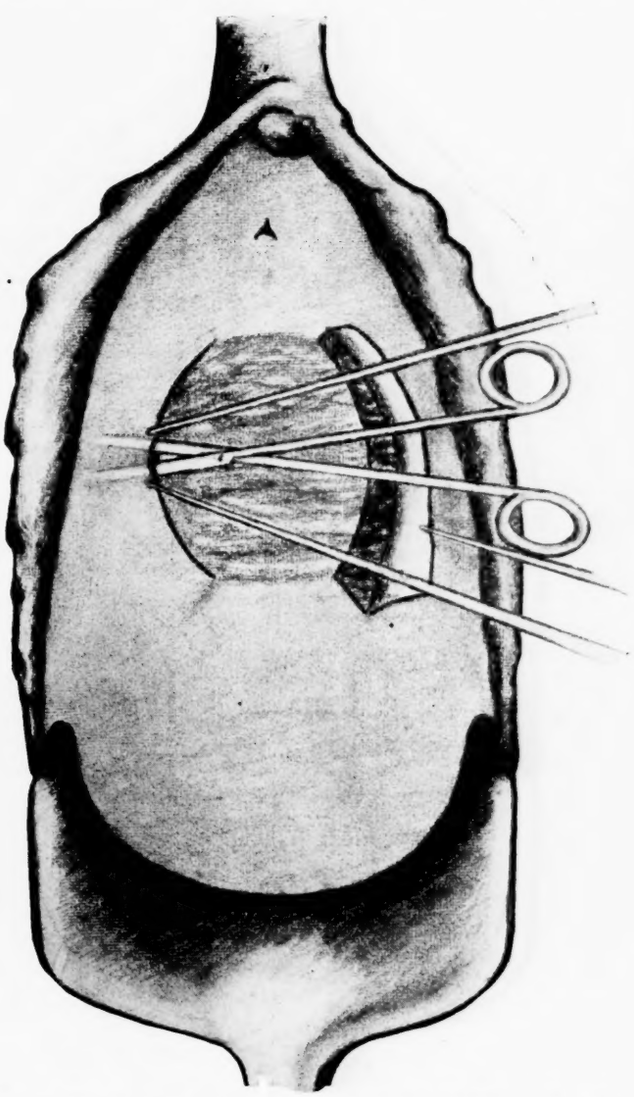

Fig. 2.—Dissecting the flaps from the bladder wall.

The dissection being completed, the flaps are made by a cross cut from the upper and lower end of the in-

cision toward the sulci. This is best done by the scissors. The other side is dealt with in like manner, after which the central area is denuded, being careful not to remove the fascia. The next step is to draw the flaps over the denuded area and fasten them along the median line. To this end a suture is carried from the lower angle of one flap, through the middle part of the denuded area near its lower edge, and across to the lower angle of the opposite flap and tied. The flaps are now approximated from below upward along the median line, all sutures being introduced as the first. The suture material may be of silkworm gut or twenty-day chromicized catgut and should be introduced at intervals of

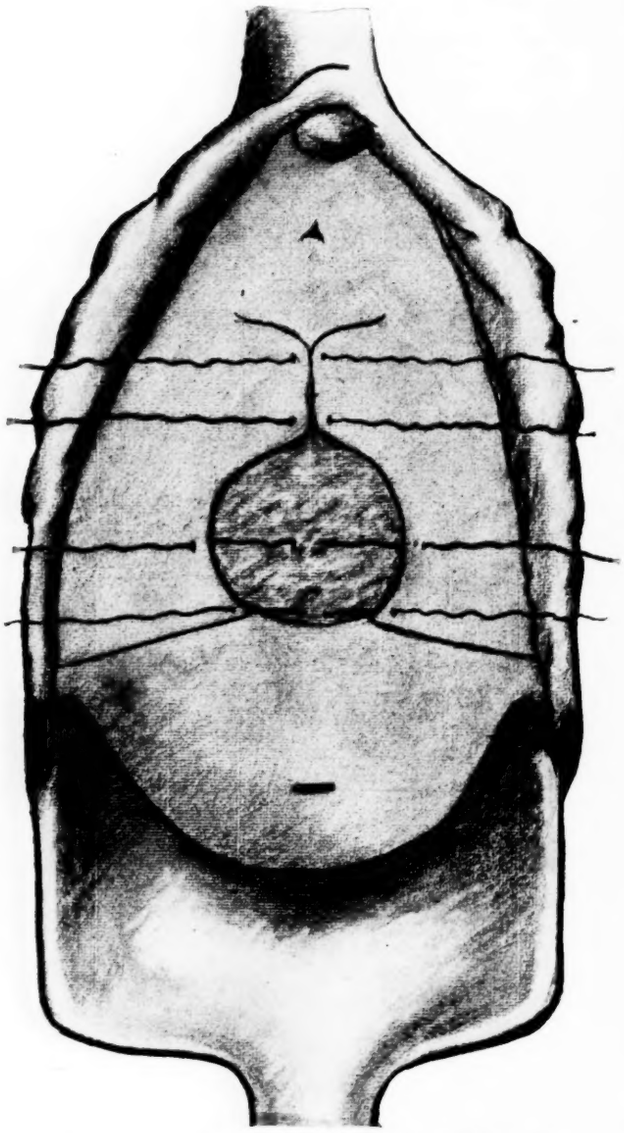

Fig. 3.—Suturing the flaps over the denuded area.

half an inch. It is better to follow the interrupted sutures with a continuous catgut suture along the median line to insure more perfect coaptation of the edges.

When the cystocele is complicated with prolapse of the uterus the Bovée, Reynolds, Dudley or some other suitable operation may be used in connection with this, in which case it is better to complete all the dissections before introducing any sutures, after which the uppermost should be introduced and tied first. It goes without saying that the pelvic floor, if defective, which is usually the case, should be amply repaired, as no plastic work on the anterior vaginal wall can long endure without its support.

This operation, as will be seen, is specially adapted to the forms of cystocele uncomplicated by uterine descensus. When such complication exists it must be dealt with *secundum artem*. For extensive cystocele associated with prolapse of the uterus I can conceive of nothing better than the operations of Goffe and Watkins.

DISCUSSION

ON PAPERS OF DRS. NOBLE AND GILLIAM.

DR. J. RIDDLE GOFFE, New York City, saw little difference in the operation performed by Dr. Noble and the old Sims operation. It seems to him that the principle is all wrong; that is, that the floor of the pelvis holds up the organs in the pelvis. This is contrary to Nature's plan of holding organs in place. Nature's plan is that of suspension. All the organs in the human body are held up by their ligaments. The same plan that Nature employs to hold organs in place in the pleural cavity also obtains in the pelvis. The perineum has no pronounced function in retaining the pelvic organs in place. When it is torn it becomes an active agent in pulling organs out of place. In case of the virgin or nulliparous woman who has a cystocele the perineum is perfectly intact. That is due, in many cases, to the elongation of the supravaginal part of the cervix. The upper attachment of the bladder, at the uterus which is one of its chief points of support, has come down and naturally the bladder has come down with it, and a cystocele forms without any impairment of the floor of the pelvis or of the perineum. The bladder is held in place by ligaments, as are the other organs. Dr. Goffe said that anatomists do not say it is held up by the perineum. It is only since the work of the gynecologists in emphasizing the importance of the perineum that there has been a departure from that original idea, bringing in the perineum as being the principle support of the organs in the pelvis. If the perineum is torn through into the rectum, so that there is no support from it, the experience is that the pelvic organs stay in place. Building up the floor of the pelvis, therefore, does not apply, except when there is a laceration of a certain degree, producing a rectocele. Dr. Goffe's operation is based on the principle that the bladder is held in place by its ligaments. The idea of an organ being suspended from another movable organ, he said, is no exception to Nature's plan. Dr. Goffe recognizes two causes of cystocele: 1. The descending or weakening of the natural ligaments and supports from above. 2. Weakening of the fascia in the anterior vaginal wall which causes a hernia. The latter is brought about by the anterior lip of the uterus and the anterior wall of the vagina with the bladder being forced down in front of the presenting head, and caught under the symphysis. The constantly collecting urine in the incarcerated bladder distends the fascia, and the bearing down efforts stretch it to the point of rupture. There is, then, a hernia and descent of the bladder. Dr. Goffe's plan is to dissect the bladder free from all its former attachments, carry it up in the peivis and hang it from above. If all the parts have come down, the uterus must first be restored to its normal position. This can be done by shortening the uterovesical ligaments, round ligaments, or both. Dr. Goffe does this from the vagina. After this is done, and the upper supports made secure, the base of the bladder is carried up and spread out over the uterus and broad ligaments by sutures.

DR. EDWARD REYNOLDS, Boston, thought that Dr. Goffe took an unnecessary antagonism to other operators by going into this description of the way in which the bladder is suspended from above. Most operators believe that when a cystocele is complicated by a lacerated perineum the perineum should be repaired. Everybody, he said, knows that the bladder is hung from above, and that Nature planned by the lower ligaments to limit the extensive excursions of the bladder in such efforts as defecation, expiration, etc., and that if these excursions are not checked the upper ligaments, which support the bladder, will become overstretched. It also seemed to Dr. Reynolds that Dr. Goffe's operation is unfortunate in

involving the opening of the peritoneum. To repair cystoceles without opening the peritoneum is an advantage. According to Dr. Reynolds there are three important principles involved in the repair of cystocele: 1. The excision of the overdistended and weakened portion of the vaginal wall. 2. Utilizing the most fixed points in the vaginal wall for the application of the sutures. 3. Pushing the cervix upward and backward. If these three principles are observed, it makes little difference which operation is used, and almost all modern operations meet these three requirements. Dr. Noble's operation, he thought, would be a very easy one, one which might do very well for small cystoceles, and especially for those in which for any reason it is necessary to open the abdomen and suspend the uterus; but he thought more support would be gained if the line of excision runs out to each side of the cervix so as to throw the cervix backward, as in his operation.

DR. I. S. STONE, Washington, D. C., agreed with Dr. Goffe in many respects, but thought that he (Goffe) had made the operation a little bit more radical than is necessary. There is one common criticism in regard to both these papers: that the uterus, as the authors regard it, is a fixed organ; that it is high in the pelvis, else why do they hang the bladder to it? Dr. Stone agreed with Dr. Reynolds that it is often necessary that the uterus be fixed to the abdominal wall in some manner. Nulliparæ frequently have retroversion. They may have small cystoceles. If they bear children, they are almost certain to have prolapse, as has been mentioned. In a few years, he said, many writers will be endeavoring to understand the causes of retroversion; what allows the descent of the uterus, what paves the way to cystocele and the conditions which follow.

Dr. Stone said that he has never been satisfied with the ordinary ligament operation. After thorough investigation of the sacrouterine ligaments, and their anatomical attachments, he has been unable to find them of any appreciable strength in supporting the uterus, because the whole retrouterine peritoneum and the connective tissue of the pelvis share in the descent, in which the cystocele, as Dr. Noble said, is simply a hernia.

DR. CHARLES P. NOBLE, Philadelphia, stated that he did not wish to claim that this was his operation, but merely to report his experience with the principle that Hadra introduced in 1887 and published in 1889.

Dr. Noble asked how many cystoceles Dr. Goffe or anybody else ever saw in virgins? How many in nulliparous women? In twenty years he has not seen half a dozen cystoceles in nulliparous women, and the women in whom he did see them were the women with relaxed muscular fibers, women who had done excessive work. They form an exceptional class. Almost all cystoceles are in parous women, with injury to the levator ani muscle and fascia. The remark of Dr. Goffe with reference to complete laceration of the perineum, Dr. Noble admitted, is correct as a statement of facts, but his argument is absolutely fallacious, because any man with obstetric experience knows that complete laceration of the perineum almost never involves the levator ani muscle or the pelvic fascia. It is a median laceration. It does not injure the supporting structures of the pelvic floor, and the very fact adduced by Dr. Goffe in support of his claims is absolute proof that they are erroneous.

Dr. Noble shares with Dr. Reynolds the belief in the function of the suspension ligaments of the bladder, but he accepts the fundamental principle that a woman has a bottom in her pelvis to hold what it contains, and Dr. Goffe rejects this. A woman is constructed for child-bearing, and so Nature has put a cleft (the vagina) in the floor of her pelvis, so that the anterior segment can rise up in labor and the posterior segment can be driven down in labor. Dr. Goffe, he said, is not arguing with him, but is disputing the general principles which are universally accepted and which are set forth in the classical work of Berry Hart, whose teachings Dr. Noble accepts. Dr. Noble said that it is his judgment that these various recent operations are good, but they are all good, because they detach the bladder and let it rise up. It does not pucker up the bladder, as stated by Dr. Goffe. The bladder merely rises in the pelvis and there are no puckers in it. Dr. Goffe, he said, puts sutures in the bladder when he operates and that makes puckers. All the new operations introduced for cystocele cure the patients because they have in them the principle of Hadra, of detaching the bladder and letting it go up. Dr. Noble thinks that there are two operations which, perhaps, accomplish the most: the operation of Dr. Reynolds and that of Dr. E. C. Dudley, of Chicago. In addition to detaching the bladder they tend to throw the cervix back in the pelvis and thus anteflex the uterus. In the lesser grade of cases, therefore, there is obviated the necessity of a certain number of round ligament or suspension operations. The operation devised by Dr. Dudley, he said, has the serious disadvantage that if it is much practiced, many ureters will be injured and many men will have anxious nights after operating. So far as his own position in this matter is concerned, he merely wished to give credit to a man whose name he had never heard mentioned in conection with this operation, and to say that the principle employed by Hadra has been very successful in its results, provided a good pelvic floor (perineum) is reconstructed after the work on its anterior segment is completed.

DR. D. TOD GILLIAM, Columbus, Ohio, said that when Dr. Goffe can not see anything but the principle of suspension in holding the organs of the body *in situ*, he does not come up to the standard of himself. To hold the viscera in place, all sorts of factors must be taken into account. The connective tissue is an important factor. Then, again, if the viscera were not held from the floor or from the sides the individual would be in a deplorable condition. Take away the abdominal wall and what would become of the abdominal contents? The viscera are hung up, shored up, shelved and packed, and even quilted to other parts, according to their situation and uses. Dr. Gilliam contradicted the statement made by Dr. Goffe that the uterus falls down after a median rupture of the perineum. The floor of the pelvis, he said, is a muscle sling attached above to the pelvic bones and below to the sides and posterior aspect of the rectum. By tearing through the perineum and anterior wall of the rectum this sling is not affected; there is no lack of support, but by tearing out through the sulcus on one or the other side the sling is destroyed on that side and there will be a giving down. If there is a lateral tear on both sides, the sling is destroyed entirely and the rectum falls back, leaving the bladder without any support from below.

Dr. Gilliam felt that his operation, being a simple one and easy of execution, has a sphere of its own. It is especially designed for cystoceles of moderate size, of which there are many, and which have heretofore been passed over for the want of a simple and efficient method of dealing with them. It has the double advantage of separating the bladder from the vaginal wall, thus allowing it to adjust itself to the changed order of things and also of fortifying the weak place with two superimposed layers of fascia. This, he said, is the only operation in which the original layer is reinforced by another and stronger layer taken from the sides. For extensive cystocele he advises the Watkins or Goffe operations. He has done both a number of times and is greatly pleased with them.

Roentgen Treatment of Leukemia.—De-Luca gives the particulars of 8 cases and refers to 2 others in which he applied Roentgen treatment in leukemia, with an interval of one or more years since. Two of the patients are still in good health after retrogression of symptoms under the influence of the Roentgen rays, but the benefit was only temporary in the rest, and in some no effect was discernible from the exposures. In the 2 cured cases half of the spleen was exposed each time, for a month daily, the exposures corresponding to 2 H units. After the first month the long bones and sternum were exposed. The exposures were given daily at first, then once in two or three days. After a suspension of three months, an exposure was made once or twice a week for a time. There is nothing now to suggest that one patient, a man of 35, had ever had leukemia. De-Luca's article was published in the *Policlinico* for April, 1907.

THE STAINING METHOD FOR SPIROCHETES IN SECTION.

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The difficulty which has been experienced in obtaining constant results in staining section in which spirochetes were suspected by impregnation with silver has led us to search for another method which gives more rapid, clearer and more constant results.

In our first paper we stated that we were able to stain spirochetes with iron hematoxylin (Weigert). In following this method by counterstaining with Van Gieson's stain we found that the spirochetes were stained with the acid fuchsin a bright red, but the picture was not very sharp.

This led us to try the picric acid and acid fuchsin alone. This gave very beautiful and absolutely sharp results. The staining with acid fuchsin alone gave no results. It was necessary always to use picric acid as a mordant. The method is as follows:

1. Harden in alcohol or formalin; the length of time is unimportant.
2. Embed in paraffin and cut in usual way or make frozen section.
3. Stain in picric acid and acid fuchsin solution 10 minutes. This solution is composed of saturated aqueous picric acid solution, 99 c.c., and saturated aqueous acid fuchsin solution, 1 c.c.
4. Differentiate in 20 per cent. solution of picric acid in 96 per cent. alcohol, 5 to 10 minutes.
5. Dry with filter paper on slide.
6. Clear with xylol, or oil of origanum, and mount.

The spirochetes are differentiated beautifully stained in deep red color. The other tissue, except the fibrous tissue and reticulum, is stained yellow. This method can be used for staining spirochetes in all parenchymatous tissue.

We are familiar with the fact that this method is open to the objection that this is the specific stain of reticulum and fibrous tissue, but if one compares the pictures furnished with this article the difference between the reticulum and spirochetes will be easily seen. The reticulum is not so deeply stained; the febrils branch freely and are reticulated and show anastomosis nodal points.

The spirochetes are mainly individuals run nearly always in one direction and are much more deeply stained. Our method may be used as a specific stain for the pale spirochete and the spirochetes of lymphatic spirillosis, for which we would suggest the name of *Spirocheta lymphatica*. While we have no experience with other spirochetes stained in this way, we believe that it may readily be used for every form of spirochete.

We have controlled every section in which it has been used with Levaditi's silver method, with the same result. We have ruled out the possibility of elastic tissue by counterstaining with specific elastic tissue stains (Unna's orcein) with negative results. We believe from our present study that spirochetes stained in this way have been frequently described as reticulum.

This method may be used for rapid diagnosis of spirochetes in fresh tissue, the whole operation requiring not more than twenty minutes if the tissue be hardened in hot formalin solution and frozen sections be made.

EXPERIMENTAL LYMPHATIC SPIRILLOSIS IN GUINEA-PIGS.

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In our first paper we have described our finding of spirochetes in chronic malign lymphomatosis (Hodgkin's disease). In our second paper we have described our finding of spirochetes in the aspiration fluid from the enlarged glands of acute lymphatic leukemia and chronic benign lymphomatosis during life.

From our further study of this subject we wish to group together as primary lymphatic spirillosis the following diseases: Acute lymphatic leukemia, chronic lymphatic leukemia, pseudoleukemia or Hodgkin's disease, chronic benign lymphomatosis, lymphosarcomatosis (chloroma and myeloma).

We would suggest as a nomenclature based on the etiology of these affections the following scheme:

LYMPHATIC SPIRILLOSIS.

- ACUTE FORM.....
  - A. With Lymphocytosis.
  - B. Without Lymphocytosis.
- CHRONIC FORM..
  - A. Benign
    - (a) Without Sarcomatous Change.
    - (b) With Sarcomatous Change.
  - B. Malign
    - (a) With Sarcomatous Change.
    - (b) Without Sarcomatous Change.

We suggest this scheme because from all of the above diseases we have found spirochetes in sections from the glands in enormous numbers. From one case of which we present the photograph, which macroscopically presented the picture of tuberculosis of the lymph glands and microscopically was diagnosed lymphosarcomatosis, we were able to cultivate spirochetes in guinea-pigs.

Portions from the above glands were injected subcutaneously into a guinea-pig in the search for tuberculous infection. No tuberculosis developed. We were surprised to find two months later after our discovery of the spirochetes in these affections that this guinea-pig had, at the site of inoculation, an ulcer about 0.5 cm. in diameter and enlarged glands in each groin. These glands were about 2 cm. in length. In the aspiration fluid from these we found spirochetes of the same form as those in the original glands by staining with a modified eosin-methylen-blue-toluidin-blue (Proescher) method. We were unable at any time to obtain good results with Giemsa's stain. On extirpation of a gland we were able to demonstrate, in sections stained by Levaditi's method and by our own picric acid and acid fuchsin method, tremendous numbers of spirochetes in every way similar to those found by us in the original lymphosarcoma.

We have transferred the infection from this first guinea-pig to three healthy guinea-pigs and to rats with similar results, *i. e.*, with the production of an ulcer at the site of inoculation and enlargement of glands in the groin. The ulceration commenced at the end of eight days. It had the appearance of a syphilitic ulcer with hard, indurated edges. The glands were slightly enlarged and distinctly felt on the eighth day.

Staining of sections of hardened glands and smears of fresh glands for tubercle bacilli gave negative results. Microscopically sections of glands stained with hematoxylin and eosin gave the picture of hyperplasia of the lymph gland with patches of sarcomatosis (page 1990). The history of these cases and a complete study of this subject will be published later.

Fig. 1.—Liver in congenital syphilis; picric acid and acid fuchsin stain, showing enormous number of *Sp. pallida* around the blood vessels.

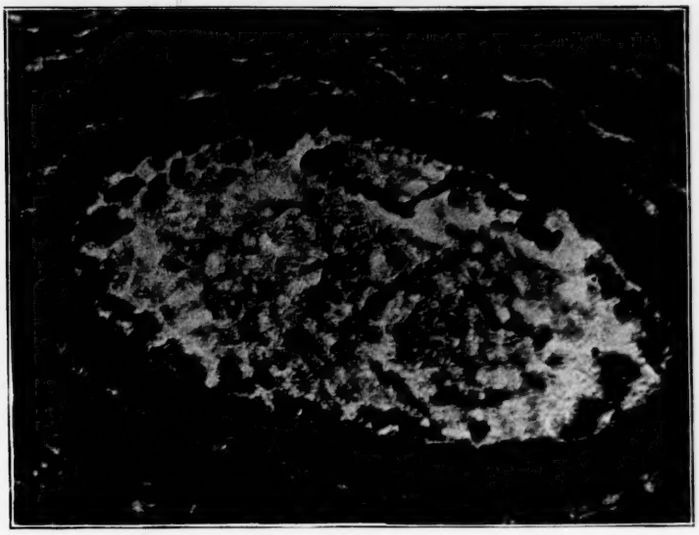

Fig. 2.—Same tissue as in Figure 1, stained by Levaditi's method, showing *Sp. pallida* around and within the blood vessel.

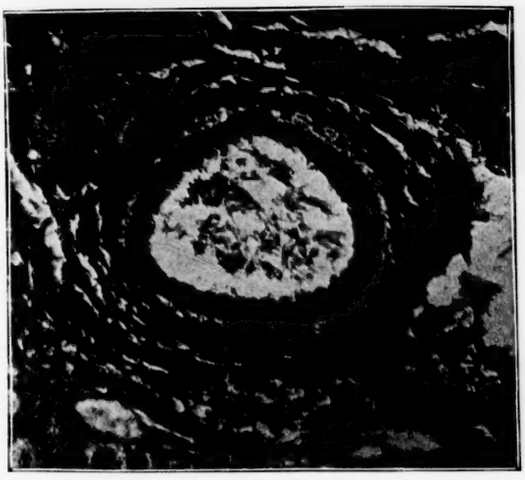

Fig. 3.—Same tissue as in Figures 1 and 2, picric acid and acid fuchsin stain, showing *Sp. pallida* in enormous numbers around and within the blood vessels.

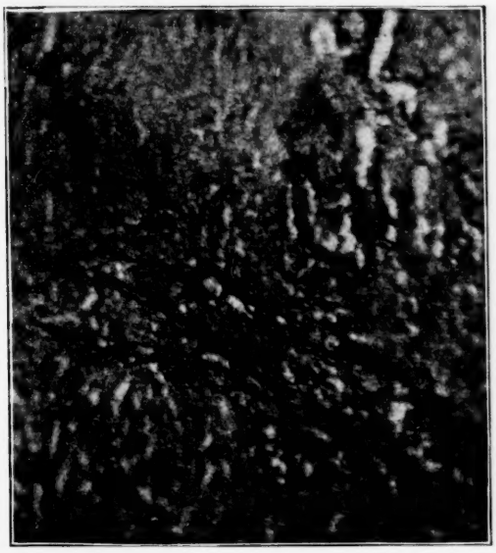

Fig. 4.—Gland of acute lymphatic leukemia; picric acid and acid fuchsin stain showing *Sp. lymphatica.*

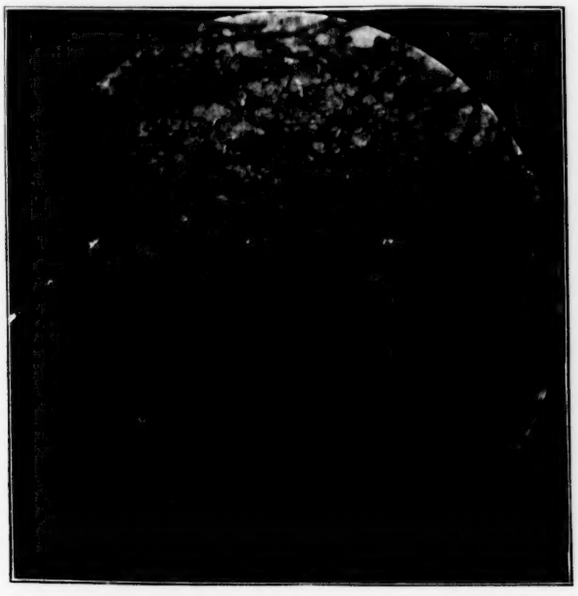

Fig. 5.—Reticulum stained with picric acid and acid fuchsin.

Fig. 6.—*Sp. pallida* in vaginal part of the uterus, primary infection, stained with picric acid and acid fuchsin.

ILLUSTRATING ARTICLE BY DRS. PROESCHER AND WHITE ON STAINING METHOD FOR SPIROCHETES.

Fig. 1.—Guinea-pig inoculated with *Sp. lymphatica* showing ulceration at site of inoculation and enlarged glands in both groins. Two months after injection.

Fig. 2.—Reinoculated guinea-pig showing commencing ulceration at site of inoculation. Fourteen days after injection.

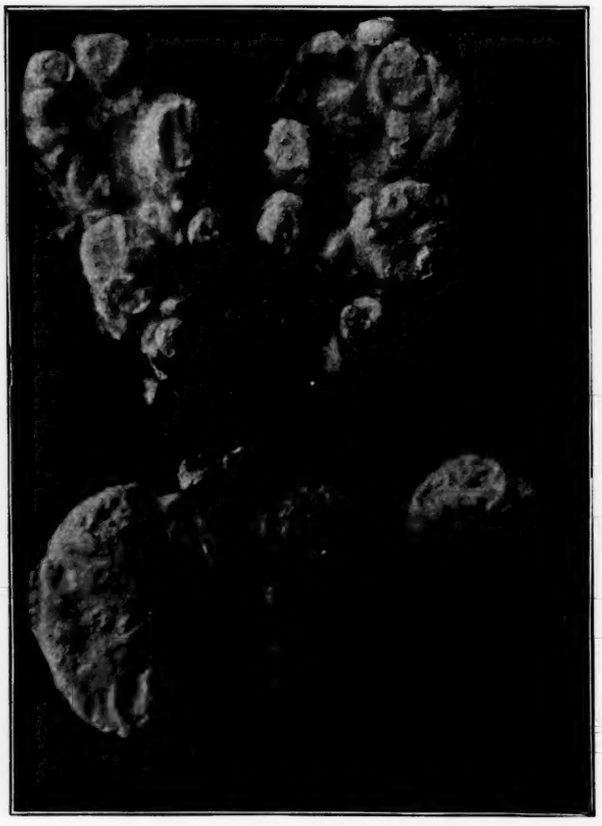

Fig. 3.—Lymphosarcoma simulating tuberculosis with caseous degeneration from which primary inoculation in guinea-pig shown in Figure 1 was made.

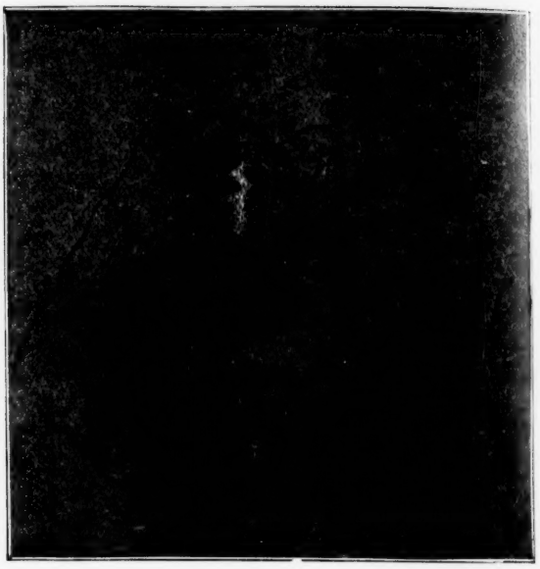

Fig. 4.—Isolated *Sp. lymphatica* in smear from gland of guinea-pig in Figure 1. Stained with eosin-methylen-blue-toluidin-blue (Proescher).

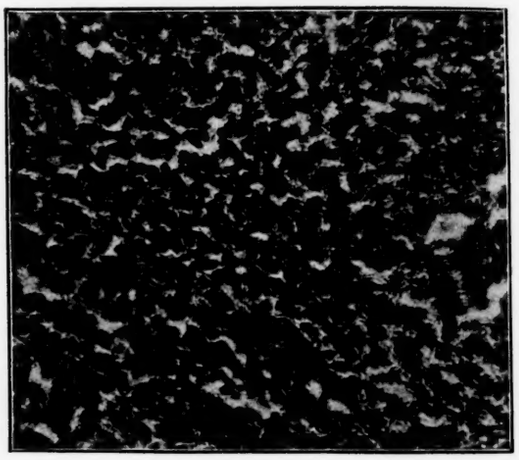

Fig. 5.—Gland from inoculated guinea-pig showing lymphosarcomatosis picture, round cells and spindle cells. Stained with hematoxylin and eosin.

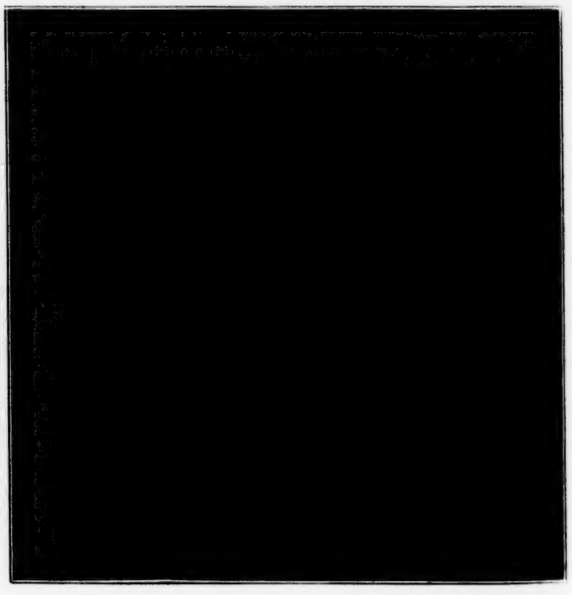

Fig. 6.—Showing *Sp. lymphatica* in gland from inoculated guinea-pig. Levaditi's stain.

ILLUSTRATING ARTICLE BY DRS. WHITE AND PROESCHER ON EXPERIMENTAL LYMPHATIC SPIRILLOSIS IN GUINEA-PIGS.

SOME IMPORTANT SURGICAL RELATIONS OF THE TEMPORAL BONE.*

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The operation on the ear which contemplates a complete exenteration of all the tympano-mastoid cavities is rightly considered as a difficult surgical procedure.

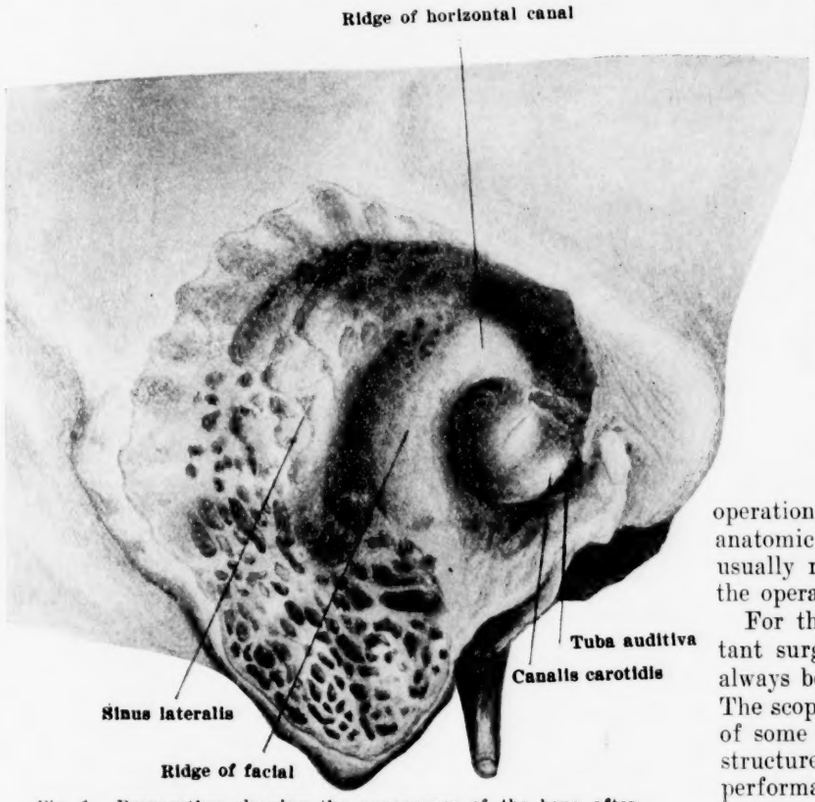

Fig. 1.—Preparation showing the appearance of the bone after the complete tympano-mastoid exenteration.

In the first place, a large number of vitally important structures are crowded together in the small field of operation. Any one of these may be easily injured if the operator is not thoroughly acquainted with their exact location. In the second place, the cavities of the tympanum and mastoid, which must be opened and thoroughly cleaned out if these operations are to be successful, are extremely complicated and their character varies widely in different individuals.

It is, therefore, a matter of first importance that the otologist who would undertake these operations on the ear should first master the details of the surgical relations of this region, which in many respects is the most difficult of any part in human anatomy. A thorough knowledge of these difficult anatomic details is absolutely essential if the operator would have a successful result in just those cases in which the indications for this operation are the most clearly defined and where the need for the operation is the most urgent. The favorable results from these operations that are often reported by surgeons who have failed to master these anatomic details and who have no appreciation of what is really implied in a thorough tympano-mastoid exenteration are to be accounted for largely by the fact that these men have failed also to understand the indications calling for this extensive operative procedure and that they have been led to operate unnecessarily on cases which could have been treated more successfully, perhaps, by local non-surgical measures.

I believe that we are justified in coming to the conclusion that in those cases in which this operation is the most clearly indicated, anything short of a most careful, complete, painstaking operation, with attention given to the complicated anatomic details of all the middle-ear cavities, will usually result in a partial or complete failure of the operation.

For these reasons a review of the more important surgical relations of the temporal bone will always be of more or less interest to the otologist. The scope of this paper is limited to a restatement of some of these relations, especially those of the structures which are liable to injury during the performance of what is ordinarily called the radical mastoid operation.

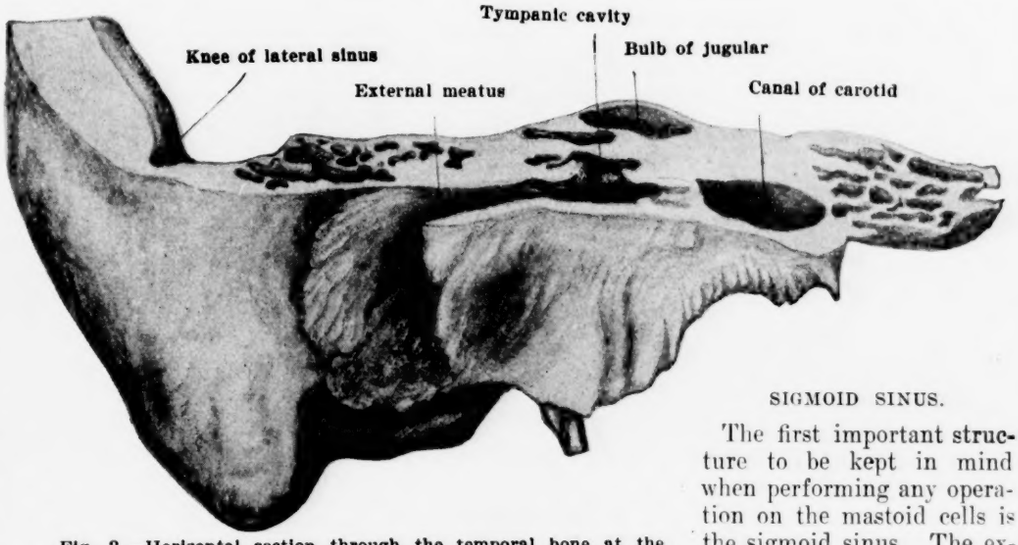

Fig. 2.—Horizontal section through the temporal bone at the level of the upper half of the external meatus, showing the knee of the lateral sinus pushed close to the surface of the mastoid.

SIGMOID SINUS.

The first important structure to be kept in mind when performing any operation on the mastoid cells is the sigmoid sinus. The exact position of this sinus varies considerably in different individuals, but even when it occupies the most favorable location from the point of view of the operator the sinus is still in a position where it can be easily injured in the process of opening up the mastoid cells. These cells usually come into more or less

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

close relation to the sinus and the two are separated by but a thin bony shell (Fig. 1). In case the surgeon does not know the exact location of the sinus in the field of operation, or is unfamiliar with the appearance of its bony covering, he may easily open it by a single false stroke of the chisel. In making an opening into the antrum tympanicum the passage is made between the posterior wall of the external meatus in front and the sigmoid sinus behind. The distance of the sinus from the posterior wall of the meatus is usually such as to permit of a free opening into the antrum. The sinus, however, frequently encroaches more or less closely on the posterior wall of the meatus, when it also comes quite close to the surface of the mastoid. In some cases where the mastoid is bared for operation the blue wall of the sinus is distinctly seen shining through the surface of the bone. Here the first stroke of the chisel in opening the shell of the mastoid could easily open into the sinus. The operator in opening the mastoid process must always proceed with the caution necessary when the sinus is close to the surface of the bone, for we have no means of ascertaining beforehand just what location of the sinus to expect. Figure 2 shows the knee of the sinus pushed far forward close to the outer shell of the mastoid.

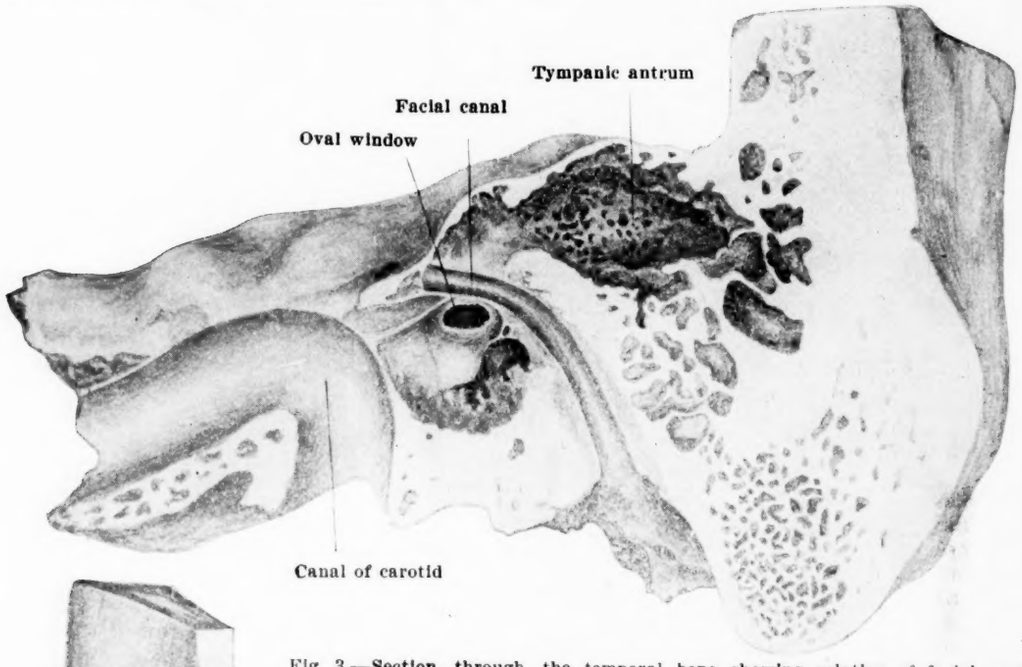

Fig. 3.—Section through the temporal bone showing relation of facial canal to middle ear structures.

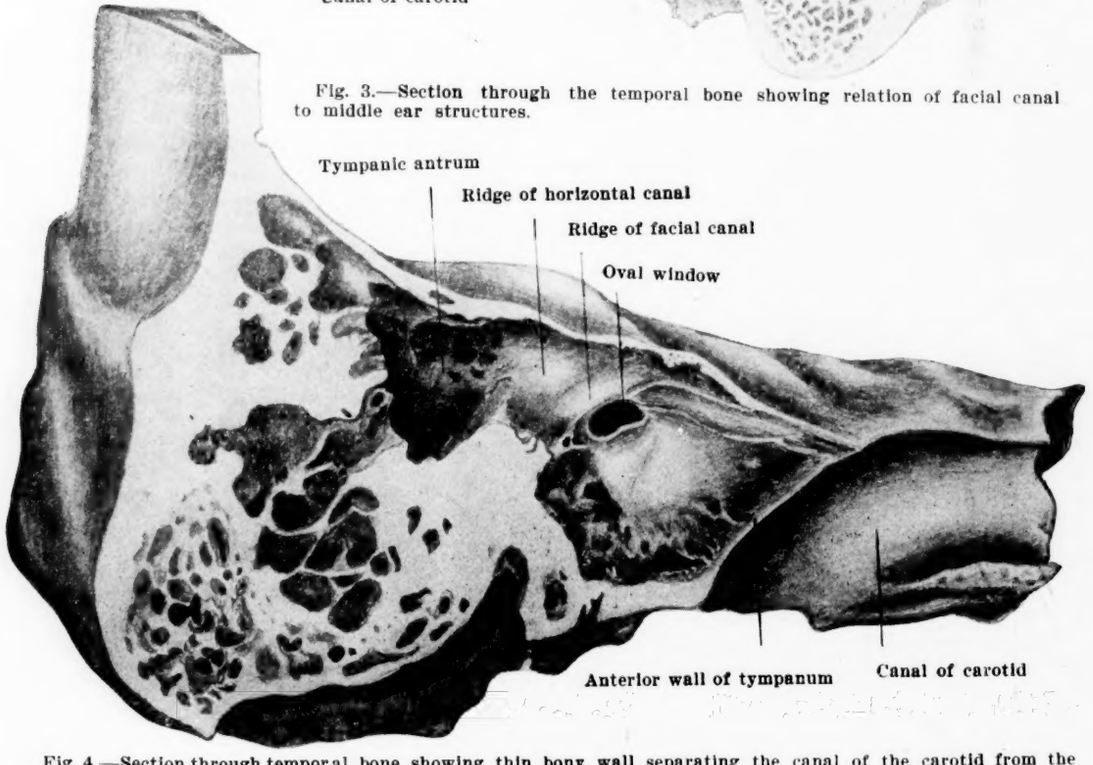

Fig. 4.—Section through temporal bone showing thin bony wall separating the canal of the carotid from the tympanic cavity.

FACIAL NERVE.

The most important structure that must be considered, especially when performing the complete tympanomastoid exenteration, is the facial nerve. This nerve enters the temporal bone through the meatus acousticus internus. It enters the tympanic cavity just above and in front of the oval window. From this point until it leaves the temporal bone at the stylo-mastoid foramen

the nerve is exposed to possible injury when operating on the mastoid.

In its course through the tympanum, the facial nerve lies just above the oval window. It is separated from the tympanic cavity by a very thin bony shell. This bony shell is sometimes absent. In this location the facial nerve can very easily be injured by the indiscreet use of the curette.

When the nerve reaches the shelf of bone just back of the oval window, which forms the posterior wall of the external meatus it curves gently downward and leaves the temporal bone at the stylo-mastoid foramen (Fig. 3). During its course through the tympanum the facial nerve lies along the inner wall of this cavity, but from the point where it curves downward at the upper posterior angle of the tympanic cavity its course lies further and further out along the posterior wall of the meatus. This relation of the nerve to the posterior wall of the meatus makes it possible to remove this wall completely only at its upper angle. An attempt to remove completely the posterior wall of the meatus toward the floor of the tympanum would surely result in a severance of the facial nerve.

Another relation of surgical interest between the facial nerve and the posterior wall of the external meatus is that from the point just back of the oval window where the nerve curves downward; its course lies further and further away from the posterior wall of the meatus. This allows a considerable wedge of bone to separate the nerve from the meatus as the floor of the meatus is approached (Fig. 3).

LATERAL SEMICIRCULAR CANAL.

A structure that comes into question when operating on the mastoid is the lateral or horizontal semicircular canal. The bony covering of this canal forms a smooth, ivory-like, rounded prominence in the floor of the antrum tympanicum just where this cavity opens with the tympanum. When opening into the antrum one false stroke of the chisel after the antrum has been entered could result in opening this semicircular canal (Figs. 1, 3, 4).

INTERNAL CAROTID.

In cleaning out the tympanic cavity there are several anatomic relations that must always be kept in mind. The most important is the relation of the internal carotid to this cavity. This large artery always lies in more or less close relation to the anterior wall of the tympanum. This is especially the case at the tympanic orifice of the tuba auditiva. Here the carotid is separated from the tube by a thin shell of bone which can readily be penetrated by the curette. It frequently happens that the internal carotid forms a distinct prominence on the anterior wall of the tympanum. In such cases the carotid is separated from the tympanum by a thin bony shell (Figs. 1, 3, 4).

This relation of the canal of the carotid to the anterior wall of the tympanum and to the tuba auditiva must always be kept in mind when curetting out the tympanic cavity and especially when introducing the curette into the orifice of the tube. The force of the curette can be applied with safety only along the external or anterior wall of the tube, because along its internal wall lies the canal of the carotid.

BULBUS JUGULARIS.

A structure that sometimes comes in a close relation with the cavity of the tympanum is the bulb of the jugular. The bulb is usually separated by at least a fourth of an inch from the tympanum, but, like the sigmoid sinus, its course varies greatly in different cases. This not infrequently results in bringing the bulb into close relation to the flow of the tympanum. The bulb sometimes produces a distinct prominence on the floor of the tympanic cavity from which it is separated by an easily penetrated thin bony wall (Fig. 5). This bony wall separating the bulb of the jugular from the tympanum is occasionally wanting, in which case the bulb of the jugular is exposed, unprotected, in the lower part of the tympanic cavity.

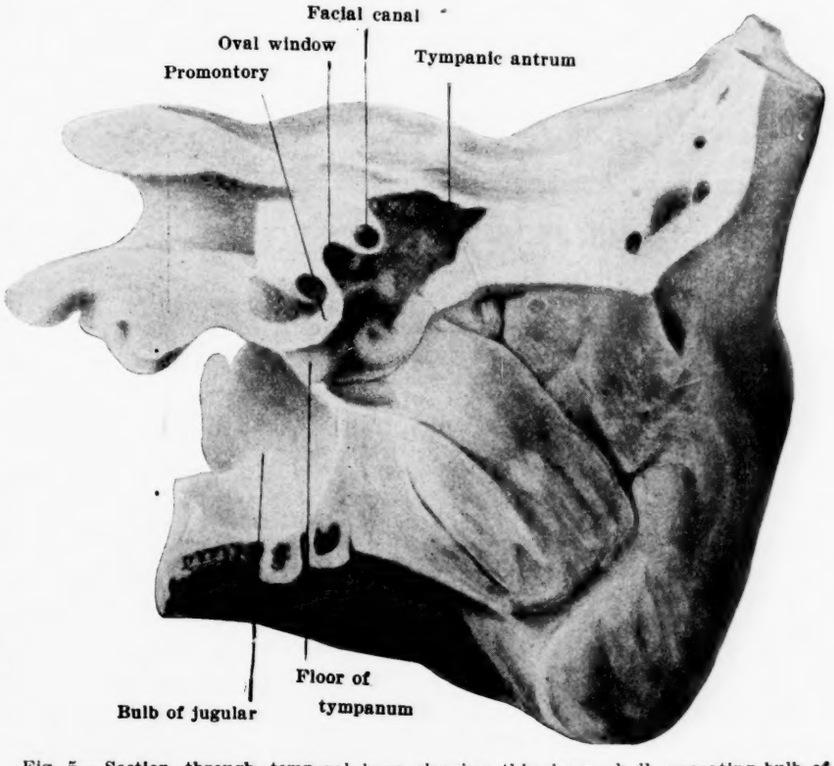

Fig. 5.—Section through temporal bone showing thin bony shell separating bulb of jugular from the tympanic cavity.

DISCUSSION.

DR. E. DE WOLFE WALES, Indianapolis, said that the so-called radical mastoid operation is not so radical from an anatomic point of view as we are in the habit of thinking, for at birth if the portion of the squamous bone beneath the linea temporalis were removed we would have a good example of a radical operation. The objective point of all operations made on the mastoid is the mastoid antrum or tympano-mastoid duct of Schoenemann. Operate as though the case were a most dangerous one and the sinus will rarely be injured. Beginning in the mastoid fossa beneath the linea temporalis, and chiseling parallel to the posterior upper wall of the external auditory canal a direct entrance is made to the mastoid antrum. The sigmoid portion of the transverse sinus may be close to the posterior wall of the external auditory canal and lie superficial or deep, or the sinus may be far back from the posterior wall of the auditory canal and lie superficial or deep. The sigmoid sinus may be close to the posterior auditory canal wall and the lamellæ above the superior wall of the external auditory canal may be in such close apposition that

even the radical mastoid operation, though indicated, would give little advantage. Such cases are difficult and most dangerous. The superior petrosal sinus has rarely been injured. In the tympano-mastoid exenteration the digastric groove or the incisura mastoidea of Koerner may be of great aid. At the anterior part of the digastric or mastoid groove is the stylo-mastoid foramen and still more anterior the styloid process within which lies the jugular bulb. From an operative point of view, Dr. Wales would call the digastric groove the digastric ridge. The digastric ridge can be clearly shown in every mastoid operation and indicates the depth of the facial nerve. The position of the facial nerve is known on the floor of the aditus ad antrum and the mastoid ridge indicates the position of the facial nerve near the stylo-mastoid foramen. There are three known points, therefore, to orient the descending or third portion of the facial nerve: First, the aditus ad antrum, and we may also see the external lateral or tympano-mastoid, semi-circular canal; second, the digastric ridge, which is brought into view with the chisel, gouge or curette, and third, the posterior wall of the external auditory canal. Another aid, which was first mentioned by Trautmann, is the fact that as the facial canal is approached in chiseling the facial ridge, there may be spurting of the branches of the stylo-mastoid artery. It is a warning that one is close to the facial nerve.

DR. B. A. RANDALL, Philadelphia, said that his study of nearly two thousand temporal bones had revealed no rule derived from the externals of the bone or of the entire skull, which can afford reliable indications as to what may be expected in regard to the inner structure. The sulcus is usually larger on the right side, although not necessarily more exposed to injury; and in the brachycephalic skull it is more superficial, but little more vulnerable than in the slab-sided negroid type. Now that we feel it so needful to scrutinize the dura in the sigmoid sulcus, and the middle cerebral fossa, on the slightest suspicion of disease of the inner table, our concern as to the exact relations of these cavities is less, since cautious operation ought not to wound them in exposing them.

One essential idea as to the temporal bone, Dr. Randall said, is too often lost sight of, that is, its osseous conformation is secondary to the form of the labyrinth and facial nerve within it, and that these prime essentials of the region are almost invariable in all cases and at all ages. The temporal bone is a mere primitive group of cartilaginous centers when these nerve structures are practically full-formed, which attain full size at birth and are not known to undergo further enlargement.

Therefore, the discussion as to the variability of location of the facial canal and labyrinth is based on reference, not to the fixed points of the skull, but to the varying external landmarks, which need not so much concern us. It is easy, he said, in every case to determine with close approximation the position of the oval window. Immediately above this in almost horizontal course passes the facial canal to make a turn abrupt rather than gentle, and to descend in an almost absolutely vertical line to the stylo-mastoid foramen, which is also easily defined in every temporal bone. Whatever the dimensions and configuration of the outer parts, whether the auditory canal is exactly transverse or is extremely oblique in its outward and forward course, can be determined with reference to these fixed points of the skull, such as the vertical plane and the horizontal plane, and need not disturb us at all in determining the proper location of the invariable structures.

Dr. Randall protested against the tendency to hold in a wrong position the specimens seen in book illustrations. An admirable picture by Politzer gives a section of the parts with the facial canal laid open, and what is said about the nerve is apparently justified, until the bone is placed in its natural position, when it is seen that the facial canal is vertical and the other parts oblique.

[NOTE: IN ADDITION TO THIS DISCUSSION, THE WHOLE SUBJECT OF MIDDLE EAR DISEASE RECEIVED A GENERAL DISCUSSION WHICH WILL FOLLOW LATER.]

PARASITIC UTERINE MYOMATA.*

THOMAS S. CULLEN, M.D.
BALTIMORE.

By this term we mean myomata that have for some reason become partially or almost completely weaned away from the uterus and receive their main blood supply from another source.

Uterine myomata, while primarily getting their entire nourishment from the uterus, may in time derive the greater part of it from: 1, The omentum; 2, large or small bowel; 3, bladder; 4, mesenteric vessels; 5, Fallopian tube; or from several sources at the same time. We are here chiefly interested in the rôle that the omentum plays where the myoma gradually changes its source of blood supply. The following pages will show beyond peradventure that the omentum is the guardian of the abdominal organs. In many cases where myomata exist the omental adhesions are associated with dense pelvic adhesions or with pus tubes. Here it is perfectly natural that the omentum should become firmly adherent. We are interested chiefly in that group of cases where the tubes and ovaries are comparatively normal and offer no particular incentive for the omental adhesions, and yet where for some reason the omentum manifests a certain affinity for the subperitoneal and usually pedunculated nodule, becomes adherent to it and soon furnishes a large part of its sustenance. Sometimes only a few vessels pass from the omentum to the myoma. As

Fig. 1.—The gradual disappearance of omental fat when the omentum sends many vessels to a parasitic myoma (Path. 7925).

The uterus is about twice natural size and contains several small myomata. Attached to its anterior surface by a short slender pedicle is a slightly lobulated myoma and attached to the myoma over a wide area is omentum. At *a* the omental fat still presents the usual appearance. At *b* there is atrophy of the fat and the vessels stand out clearly. At *c* there is still further atrophy of the omentum, as only immediately around the vessels does the fat still persist. At *d* all semblance of fat has disappeared, and we see the omental vessels spreading out over the surface of the tumor or plunging directly into the depth.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

the pedicle of the tumor becomes smaller and its original source of nourishment diminishes, the omentum sends in more and more vessels. These vessels may spread out over the surface or divide into smaller branches and then enter the tumor, or they may plunge at once into the depth. As a rule, we have found large arteries each accompanied by two veins. The veins in some instances reach tremendous proportions. In one case, for example, some of them were more than 1 cm. in diameter and looked like small snakes.

CHANGES IN THE OMENTUM.

The function of the omentum can be most beautifully followed in these cases. If the omentum be called on for a small blood supply a few vessels are at once sent in, and but little change is noted in the omentum, but where the tumor is large and much is required of the omentum then the vessels rapidly increase in size and the omental fat gradually disappears. The first change noted is that the vessels in the vicinity of the tumor stand out clearly and that the tissue between the vessels is becoming rarified (Fig. 1). Later the vessels near the tumor are merely supported by the peritoneal folds of the omentum. The fat continues to be absorbed until little or no trace of omentum remains, and the vessels are only recognized as omental on account of their relation to the transverse colon. This is strikingly well shown in one of our cases, where a small fringe of fat 1 cm. broad and lying against the transverse colon was all that remained of the omental adipose tissue (Fig. 3). The omental vessels seem to have an unlimited activity; for instance, in one of our cases where a very large myoma with a small pedicle existed, not only was there a liberal supply of omental nourishment to the upper surface of the tumor, but the omentum sent out a bunch of vessels into the lower pole of the tumor. These vessels formed a cord 6 cm. in diameter. The vessels were held together by peritoneum, but were free, the only fixed points being their points of origin at the transverse colon and their disappearance into the lower end of the tumor. At operation we lifted this cord up, completely encircling it with the hand. It looked just like a bunch of small snakes. One isolated omental vessel lay absolutely free for a distance of 18 cm. The function of the omentum is certainly marvelous, as was noted in one of our cases. Here the subperitoneal tumor weighed 89 pounds and was attached to the uterus by a very small pedicle, the chief nourishment coming from the omentum.

DILATED LYMPHATICS IN THE OMENTUM.

Where large myomata exist dilated lymphatics are often found in the broad ligament. It is but natural that with the increased activity of the omentum its lymphatics also should be increased in size. In one of our cases we found marked dilatation in the broad ligament lymphatics, and coursing down from the omentum, which was densely adherent to the pedunculated myoma, were markedly dilated and tortuous lymph channels. In another case the omentum, which was rapidly losing its fat, presenting here and there oval clear spaces where even the peritoneum had disappeared, a large tortuous lymph channel was clearly seen coursing down the omentum (Fig. 2).

CAUSES OF PARASITIC MYOMATA.

The cause seems inherent in myomata and not in the surrounding organs. The uterus is naturally trying to get rid of its interstitial nodules and they consequently become submucous and subperitoneal. If subperitoneal then with the continued uterine contraction they gradually become pedunculated and finally the mere weight of the nodule, making traction on the pedicle, will still further attenuate it. With the diminished blood supply these nodules are usually prone to degenerate, and often show hyaline degeneration or necrosis. The peritoneal surface evidently develops a slight roughening and the omentum at once becomes adherent.

If this reasoning be true, then we would naturally expect the part of the tumor farthest away from the pedicle to suffer first, and a reference to our cases has shown this to be true. The omentum appears to be fulfilling its normal useful function of guarding other abdominal organs from danger. If the omentum does not furnish the myoma with the necessary nourishment then the myoma will either develop an abscess in its interior and open into the intestine; for example, as in one of our cases, or it will call on the intestines or bladder for sustenance.

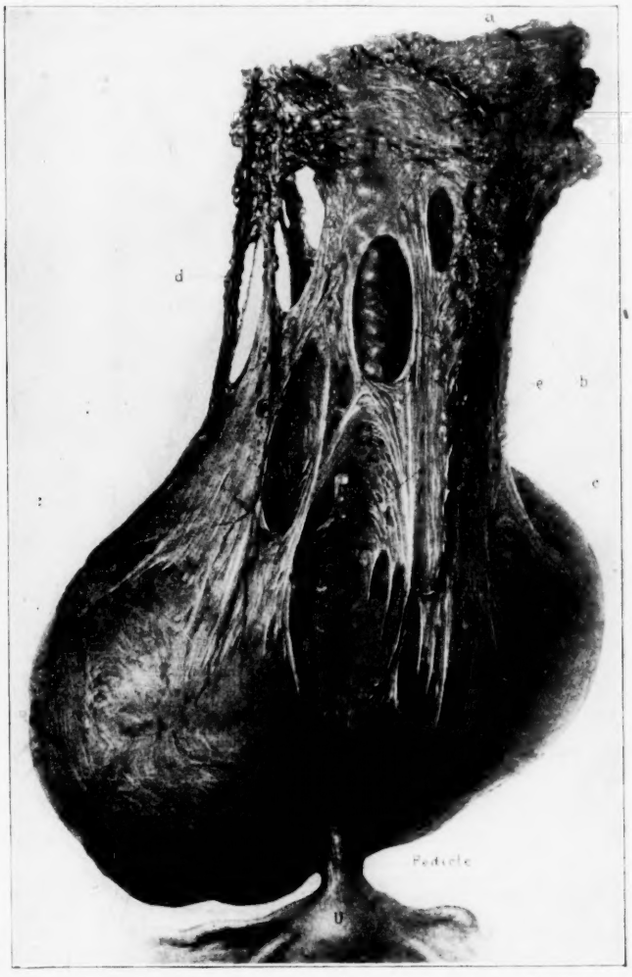

Fig. 2.—Parasitic myoma receiving a large blood supply from the omentum. Partial atrophy of the omental fat (Gyn. 7220).

The sketch was made immediately after operation. The uterus is normal in size. Attached to the fundus by a short slender pedicle is a myoma 19x14 cm. Covering the entire upper surface of the tumor are omental adhesions, and as seen from the pathologic report the greater part of the myoma had undergone hyaline and cystic degeneration.

The picture well depicts the gradual atrophy of the adipose tissue that follows when many omental vessels are furnished a tumor. At *a* normal omentum is seen, while at *b* the blood vessel has lost its adipose covering and stands out clearly. In the lower part of the omentum all trace of fat has disappeared, *c*, and nothing but the peritoneal layers of omentum and the vessels remain. At *d* the vessel is very clearly seen. At numerous points even the peritoneum is giving way, clear spaces resulting. In one of these a large tortuous vessel, *e*, filled with clear fluid, is seen. It is a markedly dilated lymph vessel.

TECHNIC IN PRESENCE OF OMENTAL ADHESIONS.

Naturally the first thing to do after opening the abdomen will be to control the omental vessels. We always make it a point to tie off the omental vessels twice on the proximal and once on the distal or tumor side. These vessels are so delicate and tear so easily that we invariably tie instead of clamping and then tying. The mere weight of the artery forceps is at times sufficient to tear them and tremendous hemorrhage follows.

It is of the greatest importance always to tie under sight, consequently the incision must be sufficiently long to enable the operator to see all the vessels clearly. Where the omental adhesions extend over a wide area we gradually lengthen the incision as it is found necessary, never attempting to liberate adhesions far out under the abdominal wall, as they may contain large veins or arteries.

In one case where the tumor weighed 89 pounds these precautions were carefully observed, and yet so intimately was the tumor everywhere attached that notwithstanding our care a small piece of liver came away with the tumor. With the careful and methodical tying of omental vessels even the largest tumors may often be removed with the loss of not over two ounces of blood.

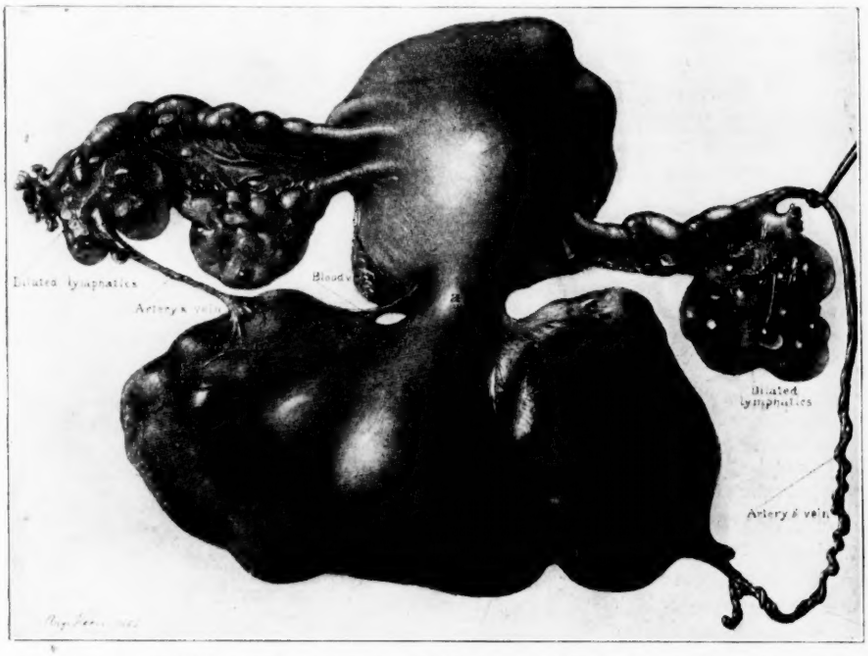

Fig. 4.—A partially parasitic myoma receiving part of its nourishment from the Fallopian tubes (Church Home and Infirmary No. 495).

The uterus contains several interstitial myomata. Attached to the posterior surface of the uterus by a short pedicle is a broad lobulated myoma. On the left side an artery and vein pass from the outer end of the tube to the anterior surface of the tumor. The branches of the artery spread out over the tumor. On the right side is what might be termed an unnecessarily long adventitious artery passing from the outer end of the tube to the posterior surface of the tumor, where it plunges into the depth. The accompanying vein clings like a vine to the artery, taking a very tortuous course. The fimbriated ends of both tubes are patent. The left ovary is normal. The right was not removed. The cystic spaces near the outer ends of both tubes seemed to be dilated lymph spaces. There was no evidence of pelvic peritonitis.

The further clinical history in such a case where operation is not undertaken would be of great interest. The pedicle would naturally become thinner and thinner until finally connection with the uterus would be severed. The tubal vessels would in the meantime all have materially increased in size. With the entire weight of the tumor now on the arteries and veins any misstep or jolting might be sufficient to rupture one or both of the vessels and fatal hemorrhage would speedily ensue.

ASCITIC FLUID ACCOMPANYING UTERINE MYOMATA.

Ascitic fluid is frequently associated with fibroma of the ovary, but rarely is there any appreciable amount with uterine myomata. We have had seven cases in which considerable ascitic fluid was detected at operation.

In Gyn. No. 9786, where the rounded myomatous tumor reached to within 5 cm. of the umbilicus, the abdomen contained 200 c.c. of free fluid. A glance at the history will show, however, that other factors were in all probability responsible for the ascites. The patient had a loud apical systolic murmur. There was marked edema of the feet and ankles, and the patient's hemoglobin, on her admission, was only 20 per cent., but reached 43 per cent. just before the operation.

In Case 6274 the uterus contained several subperitoneal myomata and was densely adherent. About three months before operation 1,550 c.c. of fluid had been aspirated from one pleural cavity. About eleven days prior to the operation 8,050 c.c. of ascitic fluid were withdrawn from the abdomen. In this case the cardiac lesion and the accompanying nephritis were probably responsible for the accumulation of ascitic fluid.

The presence of free fluid in the abdomen in five of our cases was undoubtedly due to the tumor and not to any constitutional impairment.

In Case 12155 a large pedunculated myoma had made a three-quarter turn on itself and the omentum was adherent over an area 14 cm. in extent. Some of its vessels entering the tumor were not 1 mm. in diameter. The abdomen in this case contained two ounces of clear yellow serum.

In Case 6418 the subperitoneal myoma weighed 29 pounds, and the abdomen contained 500 c.c. of ascitic fluid.

In Case 3387, where a partially parasitic myoma existed, marked ascites was present, seven liters of free fluid being found.

In Gyn. 1383 one-half of the omentum was densely adherent to the tumor and the abdomen contained 14,500 c.c. of straw-colored fluid and about 2,000 c.c. of clear jelly-like material that was scooped out with the hand. The urine contained albumin but no casts. With removal of the tumor the albumin disappeared.

Undoubtedly, one of the most remarkable cases of the intimate association of uterine myomata and extensive ascites is furnished by Case P., which I reported in detail in THE JOURNAL of the American Medical Association Nov. 19, 1904 (Fig. 3) In this case the subperitoneal myoma was almost completely weaned away from the uterus and received its chief blood supply from the posterior surface of the bladder and from tremendous omental vessels. The abdomen contained 51 liters of clear ascitic fluid.

CAUSES OF THE ASCITIC FLUID.

This fluid is clear, straw colored and usually limpid, but may coagulate, forming a clear, jelly-like mass, as has been noted.

As previously mentioned, fibromata of the ovary are usually accompanied by ascitic fluid. Here the large

vessels in the loose pedicle become twisted, causing a transudation of serum. That the fibroma is undoubtedly responsible for the fluid is clearly proved by the total absence of free abdominal fluid after removal of the tumor.

In four of our cases the condition has been analogous. The myomata have been pedunculated and have received a large part of their blood supply from the omentum. Partial rotation of the tumor with twisting of the vessels has from time to time occurred and transudation of serum into the abdomen was the natural result.

On examination of the specimen from the case where 51 liters of ascitic fluid were present (Fig. 3), it will be noted that the myoma was attached by an exceedingly slender pedicle, and that a lateral movement of the patient was undoubtedly accompanied by partial twisting of the tumor, shutting off the blood supply of the enormous omental vessels and favoring the pouring out of serum. It is now four and one-half years since the tumor was removed, and although the abdomen prior to operation contained 51 liters of fluid, there has never been a sign of ascites since then.

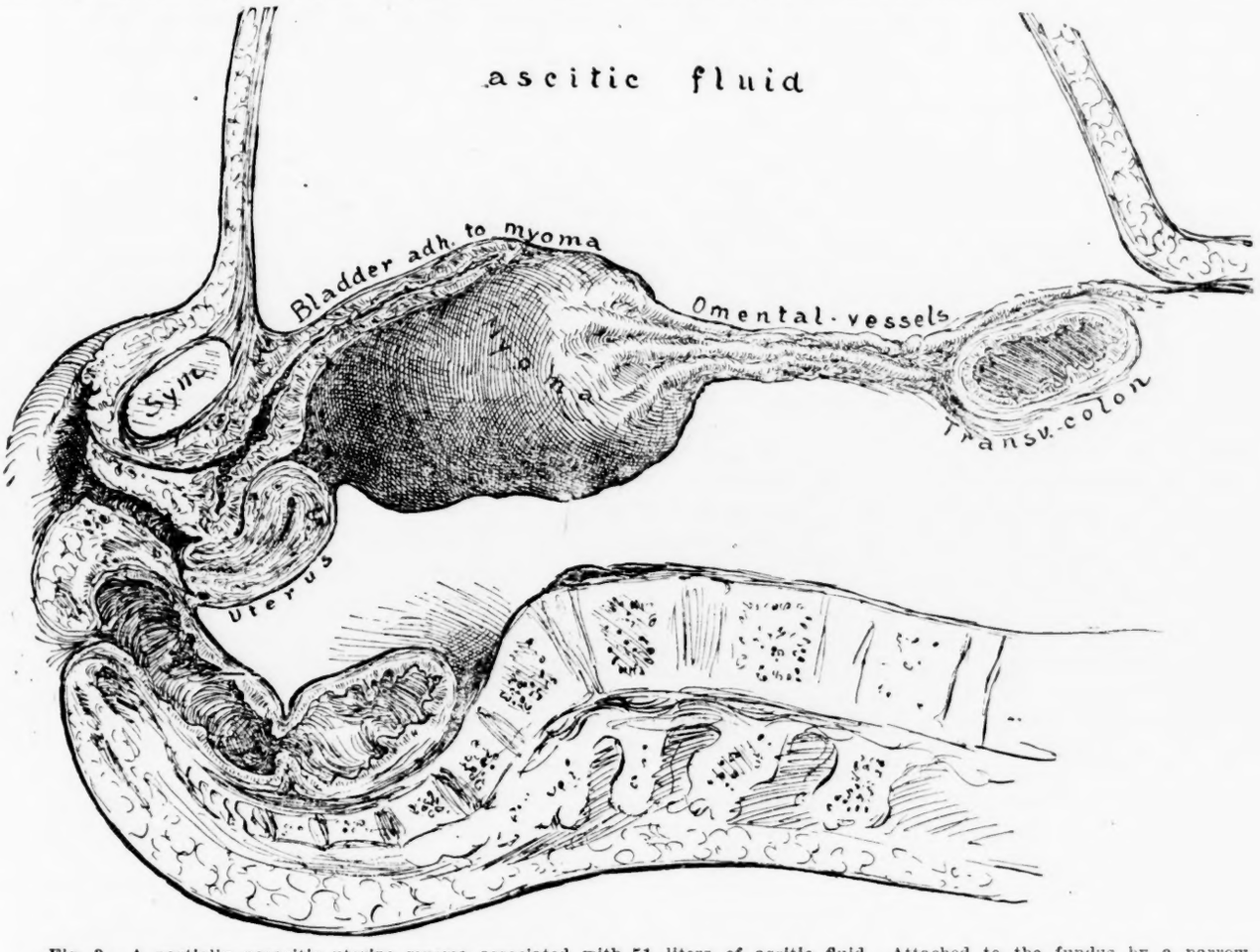

Fig. 3.—A partially parasitic uterine myoma associated with 51 liters of ascitic fluid. Attached to the fundus by a narrow pedicle is a subperitoneal myoma. Plunging into the edge of the myoma are the omental vessels. The omental fat has almost entirely disappeared. The myoma is intimately blended with the posterior surface of the bladder, from which it receives considerable nourishment. The abdomen is markedly distended with ascitic fluid. The small intestines were effectually held back by the tumor and the omental vessels.

A PARTIALLY PARASITIC MYOMA RECEIVING PART OF ITS BLOOD SUPPLY FROM THE FALLOPIAN TUBES.

In this case the uterus was sligthly enlarged and contained several small myomatous nodules. Projecting from the posterior surface was a broad lobulated subperitoneal myoma attached by a small pedicle. Passing into the anterior surface of the myoma was a small artery from the left tube and into the posterior surface of the tumor a large artery from the right tube. This artery was very long and lay perfectly free in the abdomen. Coiled around it was the accompanying vein, as is illustrated in Figure 4. There were no omental adhesions.

The fimbriated ends of both tubes were normal, hence it is at first glance difficult to explain how the tubal vessels ever reached the myoma. When the myoma formed an integral part of the uterus delicate adhesions have evidently formed between the outer ends of the tubes and the myoma, and as the myoma became more and more pedunculated the uterine blood supply diminished and the tubes gradually sent in vessels to the myoma through the tubal adhesions.

From a clinical standpoint the case is particularly interesting, because if the pedicle had become still more attenuated and had been finally severed then the myoma would have been entirely supported by the large tubal vessels, and any sudden jolting on the part of the patient might readily have caused a rupture of one of the adventitious vessels and fatal hemorrhage have followed.

PARASITIC MYOMA AT PELVIC BRIM, RECEIVING BLOOD SUPPLY FROM SUPERIOR MESENTERIC VESSELS, PERITONEUM AND APPENDIX ADHESIONS.

This is the only case in our series where the myoma was entirely separate from the uterus. It lay just above

the pelvic brim and great care had to be exercised during its removal to avoid injury of the ureter and the neighboring vessels. The nourishment appeared to come from the arteries supplying the small bowel.

In this case the uterus was about three times the natural size, contained several myomata, and the appearance at operation indicated that the myoma originated in the uterus and had later engrafted itself on to the tissue at the pelvic brim.

ADVENTITIOUS INTESTINAL VESSELS NOURISHING UTERINE MYOMATA.

Uterine myomata, whether complicated with pathologic lesions in the appendages or not, are prone to develop adhesions and naturally where adhesions exist the intestines may be implicated. As a rule, these adhesions consist chiefly of fibrous tissue, but should the uterine nourishment to the myoma diminish then arteries will occasionally be sent from the intestines to the myoma along the already existing adhesions.

In the accompanying group we depict only the most pronounced cases.

In Case 6324 a large pedunculated myoma sprang from the posterior surface of the uterus and attached to over half the anterior surface were dense intestinal adhesions containing many blood vessels. The intestines furnished a liberal blood supply to the myoma.

In Case 9027 a multinodular myomatous uterus received much nourishment from the omental vessels. The intestines were adherent to one of the tumors. These adhesions consisted almost entirely of blood vessels. The main tumor in this case weighed 29 pounds.

The multinodular myomatous uterus in Case 6774 was wedged in the pelvis and fixed by adhesions. The sigmoid flexure was densely adherent to the uterus and furnished the tumor with large adventitious vessels.

In Case 7226 the patient was in a precarious condition due to partial intestinal obstruction from the adherent multinodular myomatous uterus. One of the pedunculated myomata was becoming strangulated through torsion of the pedicle. On exposure the sigmoid flexure was found adherent to the tumor and sent numerous well-developed vessels to the myoma.

In some instances the relation between the pedunculated myoma and the intestine becomes an intimate one, so that the myoma undergoes degeneration with cavity formation. An opening may be established between the cavernous myoma and the intestine. Such a condition existed in Case 9078. The pedunculated myoma received part of its nourishment from the omentum, part from the uterus and the remainder from the cecum. A direct communication existed between the interior of the degenerated myoma and the lumen of the cecum.

An even more advanced case somewhat similar in character came under the care of my friend, Dr. J. Mason Hundley, of the University of Maryland. The patient had been under the observation of another physician for over two years and a diagnosis of uterine myoma was made. At operation a uterus practically normal in size was found. It contained a small subperitoneal myoma. Filling the pelvis was a parasitic cystic myoma which received its entire nourishment from the small bowel. It had a broken-down cavity in its center. This communicated directly with the lumen of the gut, allowing the free passage of fecal matter from the bowel into the parasitic nodule. The myoma was attached to the uterus by a few slender adhesions. Such a condition as this is exceedingly rare, and yet the possibility of such a serious complication should not be overlooked.

ADVENTITIOUS BLADDER VESSELS NOURISHING UTERINE MYOMATA.

One of the first questions the surgeon asks before making an abdominal incision when a myomatous uterus exists is, Is the bladder high up? A knowledge of the dislocation of the bladder is of great importance to the surgeon, as he might otherwise open the bladder while making the abdominal incision. In our experience only five myomata derived any appreciable amount of nourishment from the bladder.

In Case 12194 a large multinodular uterus was present. The ovarian and uterine blood vessels were greatly distended. Rising from the anterior part of the uterus was a myoma with little or no uterine attachment. It apparently derived its blood supply from the tissue surrounding the bladder.

In Case 7739 a tumor filled almost the entire abdominal cavity. Much nourishment was furnished by the omentum, but a portion was contributed by very vascular adhesions from the bladder, anterior and left lateral abdominal walls.

The bladder in Case 3842 was so intimately attached to the tumor that a piece 1x6 cm. was excised with the growth. In this case omental and intestinal adhesions also existed.

Probably the most extensive vesical blood supply to a myoma that one may encounter was noted in Case P. Here the bladder was drawn high up in the abdomen, and from its posterior surface many large and tortuous vessels passed to the tumor.

A reference to Case 5784 also showed a bladder supplying its quota of blood to the myomatous uterus. Here there were large tortuous vessels emerging from the pelvis and entering the tumor.

In Case 6915 the bladder also apparently supplied many vessels to the enlarged uterus.

MYOMATA EXTRUDED FROM THE UTERUS AND LYING FREE IN THE BROAD LIGAMENT.

In the foregoing pages we have described subperitoneal myomata that have become partially or completely separated from the uterus. Occasionally a myoma that has extruded into the broad ligament loses its connection with the uterus and receives a meager blood supply from the tissue in which it lies.

Gyn. 9674 was a very good example of such a condition. On opening the abdomen the uterus was found in retroposition. There were a few adhesions about the left appendages. Beneath the round ligament and in the broad ligament was a hard tumor the size of a small egg. It was slightly movable. The peritoneum was incised, the tumor shelled out and the hole left behind closed with catgut. The myoma in the broad ligament apparently had no connection with the ligament itself or with the uterus.

DISCUSSION.

DR. I. S. STONE, Washington, D. C., stated that his experience with tumors of this variety was like that of Dr. Cullen. He found that the omental vessels supply the greater amount of nutrition. It is very singular, he said, that these tumors have frequently been overlooked. A few years ago he wrote a paper on this subject, the first to appear in America. (Trans. Amer. Gyn. Soc., 1898, p. 411, "Migrant Tumors of the Uterus and Ovary.") In the report of one of the cases (p. 415) is contained an allusion to the omental changes which have been mentioned by Dr. Cullen. Dr. Stone considers this a very important subject, one of which surgeons should have accurate knowledge. When a subperitoneal fibroid makes its exit from the uterus it may not always reach the peritoneal cavity. He

has reported two cases where the tumor escaped through the broad ligament into the retroperitoneal space. (Trans. So. Surg. and Gyn. Soc., 1905, p. 128.) The largest of these tumors weighed 18 pounds, and was entirely independent of vascular connection with the uterus. It undoubtedly was of uterine origin because below the larger fibroid existed other fibroids which had been enucleated from the uterus through the broad ligament and had found their way also behind the peritoneum.

DR. H. J. BOLDT, New York, felt that Dr. Cullen did not lay sufficient stress on the practical side of dealing with this class of tumors in the tying off of the blood vessels. He does not believe that one should ever undertake to operate in this class of tumors until the blood vessels have been tied off. Too much stress can not be laid on the necessity of letting the adhesions alone until the blood supply has been dealt with. Dr. Boldt claimed that this class of tumors, though rare, does occur, and as Dr. Cullen has shown, the fat in the omentum disappears to a greater or less extent. In one class of tumors developing in the folds of the broad ligament the blood supply is rather meager and the tumors are disposed of easily.

DR. C. C. FREDERICK, Buffalo, recalled having seen three or four large fibroids of the uterus which started subperitoneally and had made adhesions to the omentum. He appreciated the force of Dr. Cullen's remarks concerning the necessity of securing the blood supply of these growths before removal. By making a large enough incision the adhesions to the omentum and other points of peritoneum can be ligated and fatal hemorrhage avoided. Dr. Frederick has seen fibroids weighing 35 pounds in which the adhesions to the omentum were the principal source of blood supply, and where the vessels were as large as lead pencils, running into the top of the tumor. The pedicle of the growth at the uterine origin was an inch or so in diameter, and the amount of blood supply through this pedicle was very small. When these tumors grow they will get their blood supply from the adhesions, and the blood vessels enlarge even though the pedicle is small. Therefore, the practical point in operation is to get at the zone of the blood supply by a free incision so that the vessels can be tied off before the tumor is removed, as Dr. Cullen has said.

DR. H. O. MARCY, Boston, said that some years ago he collected a series of cases not unlike these, and in one particular, such as he has not since seen. The growth was completely encapsulated in the abdominal wall. The peritoneum had been entirely closed off and he removed the fist-sized growth from the abdominal wall without opening the perioneal cavity. There was much question as to its origin, but a careful histologic study showed clearly that it was of this type of growth. This is a class of cases not common, and yet any practitioner may find these rare conditions.

DR. SETH GORDON, Portland, Maine, recalled only two cases occurring in his experience where the pedicle was so small that it was almost impossible that there could be circulation through it, and the adhesions in both cases were to the omentum, with a slight adhesion of the intestine in one place. The important thing in all these cases, he said, is that mentioned by Dr. Boldt, to stop the blood supply. One can afford to take the time there and then. It is not time wasted. The pedicle is easily managed. One specimen that he now has in his office is a complete and absolute amputation from the uterus, and is as hard as calcareous deposit can make it. He had to saw it in order to open it. It lay absolutely loose. It had been kept alive for a while by the circulation from the adhesions, but finally had cut loose.

DR. J. H. CARSTENS, Detroit, Mich., has noticed that when ascitic fluid is present, one generally is dealing with a malignant growth. He has found this to be the case in quite a few cases when the fibroid has undergone degeneration. It was new to him to find ascitic fluid in ordinary cases. He asked Dr. Cullen whether he had observed the same thing.

DR. E. MCGUIRE, Richmond, Va., has seen just such cases as Dr. Cullen described. The largest tumor he ever removed weighed sixty-five pounds. The pedicle was very small and flat, not wider than two fingers. The circulation came almost entirely from the omentum. The fat of the omentum was almost entirely gone and some of the blood vessels were a half inch in diameter. In dealing with these tumors the most important point, as was emphasized by Dr. Cullen, is to deal with the blood vessels from the omental attachment before anything else is done. Dr. McGuire has seen ascitic fluid associated with these tumors in a small number of cases, and has attributed its presence to some obstruction to the outflow of blood from the tumor. It has been generally supposed that when this condition was found that the tumor was malignant, but he holds that this is not so, and believes the condition occurs probably a little oftener than was formerly supposed.

DR. D. TOD GILLIAM, Columbus, Ohio, has had a few cases of these pedunculated fibromata in which there have been adhesions, but not such as described by Dr. Cullen with large omental blood vessels.

DR. J. WESLEY BOVÉE, Washington, D. C., agreed with Dr. Cullen that these tumors belong to a very important class regarding treatment. The largest two tumors of this variety that he met with weighed forty and twenty-eight pounds respectively. Both these tumors were removed successfully. In the case of one tumor of small size, Dr. Bovée separated the adhesions by sweeping his hand over the tumor up near the diaphragm and removing the tumor. When this was done he found the abdomen full of blood, and the women died from the loss of blood within twenty-four hours. He believes that if he had controlled the hemorrhage properly at the time of operation the woman would have recovered. The important point is, he said, that of controlling the hemorrhage before the adhesions are separated.

DR. THOMAS S. CULLEN, Baltimore, agreed with those who spoke of the absolute necessity of controlling the blood supply before attempting the removal of the tumor. Take, for example, the eighty-nine pound tumor in the eighty-five pound woman. Here the tumor extended down as far as the patient's knees, and, as the growth had to be removed intact, the incision extended from the xiphoid in a convex line down to the knees and back to the symphysis. In other words, it was nearly four feet in length. Nearly all the blood supply came from the omentum; the pedicle not being much larger than one's thumb. The omental vessels were so large that Dr. Cullen was afraid to use catgut alone, consequently Pagenstecher thread, reinforced by catgut, was employed. On the tumor he also applied ligatures instead of clamps, as the tumor was exposed to much handling, and as a bloodless field was needed for rapid work. Dr. Cullen's experience coincides with Dr. Carsten's. An abdominal tumor associated with ascitic fluid usually indicates a malignant growth. He has noted several exceptions, however. Fibroma of the ovary is often accompanied by ascitic fluid. The fluid evidently results from partial torsion of the ovarian pedicle. As noted in the paper, a partially parasitic myoma which receives much of its nourishment from the omentum may become partially twisted and then serum escapes into the abdominal cavity. Finally, there is a certain group of cases where as a result of cardiac dilatation or renal insufficiency ascitic fluid coexists with the abdominal tumor. In these cases there are often other manifestations of cardiac or renal insufficiency, namely, general edema and pleuritic effusion.

Epidemic Jaundice.—Queirolo reports in the *Riforma Medica* for August 24 an epidemic of jaundice observed last summer on the island of Elba. Men, women and children were affected, most of the sixty cases showing probable contagion. All recovered except one pregnant woman, who was prematurely delivered and died with symptoms of intense intoxication. He attributes the disease to a telluric origin, the miasma generated and preserved in wet soil full of decaying organic matters. As the soil dries the miasma is released and spread by the winds and human beings become affected directly by the miasma or by contagion from those already affected. He found that extensive excavations had been going on for some months preparatory to building, and he ordered the turned up ground to be treated with lime followed by powdered charcoal. The epidemic was thus arrested. The feces were clay colored in some of the patients, but not in all, which suggests that the trouble is a radicular angiocholitis rather than merely jaundice from retention of bile.

Special Article

PLAGUE ON THE PACIFIC COAST.

[BY OUR SPECIAL COMMISSIONER.]

A careful study of the plague situation yields somewhat more of encouragement than was anticipated, but reveals conditions which may conservatively be stated to be very grave. In order that the present epidemic in San Francisco may be clearly understood it is necessary to review briefly the history of the disease so far as it applies to the state of California; for the disease has existed, sporadically, in California for at least seven years. During the previous epidemic Surgeon-General Wyman is quoted as stating that it may have first appeared in 1897, and the San Francisco board of health placed the possible date of introduction as September, 1898. This is the earliest probable date, for pest did not appear in Hongkong until 1894 and in Bombay until 1898. In passing, it may be recalled that in both of these cities the later experience of San Francisco was foreshadowed; those who insisted on the presence of plague were reviled and abused, and denial and negation were the order of the day.

THE FIRST CASE—PROVED PLAGUE BY CULTURE.

On March 6, 1900, Dr. F. P. Wilson found the dead body of a Chinaman, Wing Chung Ging, at 1001 Dupont Street, San Francisco. There had been more or less talk of plague during the previous year, and the appearance of the body excited Dr. Wilson's suspicions. He called in the assistance of Dr. W. B. Kellogg; smears were made from the glands, cultures were made, and the cause of death was verified as bubonic plague. This diagnosis was subsequently confirmed by Kinyoun, then of the Public Health and Marine-Hospital Service, by several other persons, and subsequently at the laboratory of Johns Hopkins. There had been a good deal of doubt in regard to the diagnosis of a case said to have occurred about a year before, and at that time the *Occidental Medical Times* referred to the whole agitation as "the plague fiasco." Now, however, the condition of things was quite different; the diagnosis was confirmed beyond the shadow of a doubt.

PRESENCE OF PLAGUE DENIED.

Other cases were soon discovered and the record of dates, chronological, of the early cases is as follows: March 6, 15, 17, 18; April 24; May 11 (2), 13, 14, 29. The announcement of these various cases produced a condition of active warfare on and within the medical profession, which was disgraceful beyond the power of words to express. During the remainder of 1900, Joseph D. Phelan was mayor, and he supported and aided the board of health. But on Jan. 1, 1901, came Eugene E. Schmitz (since convicted of extortion and waiting trial on a number of indictments for bribery), and he, as well as Gage, the governor, all the newspapers in San Francisco and the State Board of Health energetically and disgustingly denied the presence of plague; opposed to this array were the city board of health, the officers of the Marine-Hospital Service, and a minority of physicians. It may be said in passing that the newspapers of San Francisco never did acknowledge the existence of the disease, though in time they ceased their abuse.

All of these early cases occurred in what is known as "Chinatown" and were confined to orientals; subsequently a few cases appeared elsewhere and among whites. During the balance of 1900 and all of 1901 and 1902, the fight raged and the work against the infection was so puerile as to be ridiculous. For instance, it was not until Dec. 19, 1901, that an examination of rats was undertaken by the Public Health and Marine-Hospital Service; Jan. 20, 1902, three pest-infected rats were found. Nor was it until Nov. 8, 1902, that the board of health began the systematic trapping of rats in Chinatown; two years, eight months and two days after the first verified case had been found on March 6, 1900!

THE QUARANTINE FIASCO.

At one time, and for a short period, an attempt was made to throw a cordon about Chinatown and quarantine it; the attempt was so spectacular and so inefficient that it merely excited the amusement and the ridicule of the whole city. The heads of the Chinese Six Companies, readily taking their cue from the governor and the mayor, concealed the sick and the dead, or removed them from the city, and in every way did what they could to prevent the stamping out of the disease and to encourage its spread to other sections. Moreover, in order to prevent being "cleaned up" or quarantined, when cases were occasionally found, in spite of the many obstructions, the patients were not infrequently reported to have just arrived in the city from some out-of-town place, thus adding confusion to chaos. It is not at all improbable that the earlier cases reported officially as coming from Santa Barbara, Bouldin Island, Stockton, etc., were cases really originating in Chinatown. The statements of the Chinese seem but seldom to have been questioned by the credulous officials in charge during these early years.

And all this clamor against common sense protection, led by the governor of the state and the mayor of the city and the State Board of Health, was continued in the face of the official report prepared after a thorough study of the situation by the special commission, appointed by Surgeon-General Wyman, consisting of Drs. Simon Flexner, F. G. Novy and Lewellys F. Barker, signed and dated Feb. 26, 1901.

THE SPREADING OF THE INFECTION.

During all this period of inefficient conduct of anti-plague measures—inefficient because of lack of support to the efforts of the competent men who were doing what they could in spite of personal abuse and villainous attack—during all of this nearly three years, no attention was paid to the territory surrounding the bay of San Francisco, though many warnings had been uttered. Nothing had been done to prevent the migration of rats from infected San Francisco to the various bay and river towns tributary to it. The *Times* said, in March, 1902: "The outside districts are, and always have been infected." And again in August: "It should be remembered that patients have died in San Francisco that undoubtedly contracted the disease in Berkeley, Davisville, Sacramento, Stockton, Bouldin Island, Santa Barbara and probably Fresno and Bakersfield." Whether or not this statement is to be accepted as entirely true, in view of what has been said as to the attempts at concealment on the part of the Chinese victims, it now seems to be true, beyond the peradventure of doubt, that the disease was permitted to gain a foothold outside of San Francisco.

That plague has gained and still holds a foothold outside of San Francisco is evident even to the casual observer of the past history and present condition of this territory about the bay. Consider one of the earlier verified cases. Case 101, E. T. Slater, an employé of the Southern Pacific Company, living and working in the San Ramon Valley, Contra Costa County. He was in the habit of shooting and eating ground squirrels (the import of which will later appear). He came to San Francisco to see some Italian laborers he was to engage; he met them at the ferry and went no further into the city than that portal. Returning home immediately, he developed plague and died in great agony, within two and one-half days. Case 107, a Chinaman, coming from Stockton, whose former home had been Bouldin Island, in the San Joaquin Valley, died on the river steamer *Peters*. Case 119, an Irish-American woman, 29 years old, living at Concord, Contra Costa County, died after less than three days' illness, Feb. 29, 1904; verified case of plague. Dead rats were found near her home, but were not examined for plague.

OFFICIAL COMMISSION REPORTS PLAGUE.

The special commission appointed by Surgeon-General Wyman, already referred to, reported in February, 1901. At the time it was charged that the policy of concealment extended even to the report of this commission, and that Surgeon-General Wyman had made an agreement to keep the report of the commission secret. Dr. Wyman has denied this and there seems no reason to doubt his attitude nor that the charge had its origin in the almost complete state of misunderstanding and personal heat which existed at the time. Further, his expressed views in favor of publicity, and his continued sup-

port and encouragement of the work, would lead one to doubt the foundation in fact of such a charge. The important fact is that from February, 1901, to February, 1903, during all of which time it was definitely known that plague existed in and about San Francisco, absolutely nothing of any tangible value was done to stop it or to prevent its entrance into other territory.

PUBLIC HEALTH SERVICE IN CHARGE.

In February, 1903, Dr. Rupert Blue, passed assistant surgeon, Public Health and Marine-Hospital Service, was placed in charge of the plague work, and for the first time during the epidemic a systematic plan of work was adopted, rats were energetically hunted, and foci of infection searched out and eliminated. The published records show that Dr. Blue repeatedly called attention to the fact that the native ground squirrel was probably very susceptible to pest and that, furthermore, it was strongly probable that the squirrels of Contra Costa, Alameda and possibly other counties about the bay had become infected and were spreading the disease. It was noted that the squirrels, especially of Contra Costa County, were rapidly dying off from some undetermined form of epizootic. As time passed cases unquestionably originating in these surrounding counties were noted, and in almost every instance there was pretty direct connection with squirrels—as in Case 101, and others to be noted.

THREE YEARS FREE FROM PLAGUE.

The report of the work in San Francisco for the year ending June 30, 1903, shows that 175 bodies had been necropsied, of which number 38 had died of plague; 2,060 rats had been examined, of which number 15 were pest infected. From this time on the infection steadily lost ground in San Francisco, and the last verified case was found Feb. 29, 1904; no case is known to have occurred in the city from that time until May 27, 1907.

SQUIRRELS INFECTED WITH PLAGUE.

While it is probable that no cases of plague occurred in San Francisco during this period of three years and three months, a number of cases were found in Contra Costa County, and several in Alameda County, thus showing continued existence of the disease, probably due to the squirrel infection, in this territory. For example, one case may be instanced which was referred to by Dr. Blue at the meeting of the California Academy of Medicine for November, 1907. This case occurred in a boy who was seen by Dr. Blue immediately after the fire of April, 1906. The lad lived in Oakland and frequently went out into the hills back of the town hunting squirrels. On such an expedition in April he shot two squirrels, which he had to drag out of their holes, as the squirrel always goes into his hole to die. One of the animals is reported to have bitten him. He took them home, skinned them and ate them. Within forty-eight hours he had a well-marked case of plague with nearly complete glandular involvement. Some time previously efforts had been made to secure squirrels for examination, but all the dead ones brought in were too far decomposed to be of any value for this purpose. Again the effort was made, and particularly to secure squirrels from Strawberry Cañon, the place back of Oakland where this lad had shot his unlucky specimens. The effort was entirely without success. In Contra Costa County a total of some five or six verified cases, and probably as many more, clinically plague, but not verified, are known to have occurred, and there is little doubt that most of them, if not all, originated within the county. In some half-dozen instances the close connection between ground squirrels and the disease is sufficient to warrant an indictment of the squirrel and place him with the rat as a plague carrier. Moreover, the squirrel, like the rat, is a flea-infested animal.

A word as to the general conditions in these counties will be necessary to explain the small number of cases which have been noted. The country is open, rolling and only wooded in the cañons and on the sides of some of the hills. As a rule, houses are not crowded together even in the towns, and rats are not plentiful except in Oakland, Alameda, Berkeley and Richmond. Ground squirrels, on the contrary, are, or were up to the time of their mysterious taking off, very plentiful in the extra-urban portion of these counties. There is plenty of sunshine and fresh air and the wind is constantly blowing. The general health is good and the chance for infection, except in cases where individuals have come in direct contact with squirrels, is not great. It is obvious that, as the ground squirrel is small, uninviting and not a particularly delectable food, but few people will come in direct contact with him and thus be exposed. It is equally obvious that, as there is a minimum population of rats, the infection will not be great from this source. Consequently, it is not a matter of surprise that so small a number of cases have occurred even in face of the recognized existence of pest infection.

Granting the existence of plague in the sections of California outside of San Francisco to which reference has been made, and this is a fact of official knowledge and recognition in the Public Health and Marine-Hospital Service, it is at once apparent that, even if the disease was rooted out of San Francisco and did not exist there from 1904 to 1907, it was at any time liable to be reintroduced from some one of the outlying and *undiscovered* foci. The grave danger from the continued existence of these undiscovered foci can not but be apparent to the least thoughtful individual. This is the most probable explanation of the reinfection of San Francisco, but the other theories, in the order of their plausibility, are:

Reinfection from some foreign port. This, of course, is always a possibility in a seaport city and can neither be proved nor disproved in the present case.

The third theory presupposes that the disease continued, in rats, during the period from February, 1904, to May, 1907, without producing any cases in human beings until the latter date.

THE EARTHQUAKE BRINGS BACK PLAGUE.

The fire of April, 1906, undoubtedly wiped out any possible remaining foci in Chinatown; it also killed most of the rats. Some, however, were driven out of the burned section (in which all cases of plague in the city during the previous epidemic had occurred) into the unburned residence districts. The period following the fire was one of general disorganization, and while much sanitary work was done, sanitary conditions were, in general, very bad. The sewer system was almost completely broken up; water was scarce; people were compelled to cook, and almost to live, in the streets; garbage was thrown about promiscuously; refugees were crowded together, first in tents and later in shacks, and these camps soon became filthy. Then the people began to drift back into the sections where they had formerly lived. The refugee camp in Washington Square, in the center of "North Beach," or the Latin quarter, soon became a hive of dirty humanity and swarmed with rats and fleas; the same is true of the camp at Lobos Square. Garbage, refuse and filth being plentiful, the rats which had been driven from their former haunts returned with the return of people and food. The worst two foci noted as yet during the present epidemic are located in the districts in which were these two camps—Washington and Lobos squares. But cases have originated in almost every section of the city, and there are many well-marked foci at the present time. This theory would explain the wide distribution of these foci as being due to the infected rats from Chinatown having carried it into all quarters of the city, and, furthermore, having learned that they can get food in places other than their previous haunts (the burned district) now pass freely from that section into more outlying neighborhoods.

So much for theories as to the how of the reinfection. Doubtless the real modus will never be known. The facts, however, are sufficiently interesting, not to say alarming. May 27, 1907, Oscar Tomie, a sailor on the sea tug, *Wizard*, who had not left the vessel for six weeks or more was taken sick and removed to the Marine Hospital, where he died of a verified case of plague. Almost immediately afterward, the tug made a trip north and foundered. The crew was saved, but lost all personel effects, except the clothes they wore when rescued. August 12 two cases were reported from 12 Midway Street, and 16 suspicious cases were observed during the month, 13 of them being verified as true plague, with 6 deaths. From that time to the present cases have been found in numbers varying as indicated in the appended table, from month to month.

CONVEYANCE OF PLAGUE INFECTION.

A glance at a photograph of the map in the health office, and on which the locations where plague cases and infected rats have been found are indicated by the pins, will show how the city has been riddled with the infection, and the directions in which it has extended from the early foci. The pins are grouped most densely in the sections where were located the refugee camps at Lobos and Washington squares. The pins are slowly but surely stretching to the southward, following the "San Bruno Road"—a ready means of rat migration and a section where sanitary conditions are not good and where rat food is plenty—and moving steadily toward San Mateo County. It may also be noted that the City and County Hospital (now closed) was a focus of infection. In August, Dr. C. Jones, an interne at the hospital, was infected, but fortunately, recovered. The buildings are old, unclean and insanitary wooden structures, and should be burned. They are a direct menace.

HOW THE PLAGUE IS BEING FOUGHT.

Now as to what has been and is being done. When plague was first found, in May, the city government was in turmoil. The mayor was being tried for boodling; he was later convicted and the present mayor, Dr. E. R. Taylor, appointed to fill out the unexpired term. In November Dr. Taylor was elected. The board of health, which had been for some six years or more a mere tool of Schmitz and his boss, Reuff, was incompetent. Through some fortunate accident they had, however, appointed a capable, honest and energetic man as health officer—Dr. James T. Watkins. He urged on the board the plan, which has subsequently been carried out, of dividing the city into districts, each to be in charge of an inspector, who in turn is to be held responsible for his district, and with sufficient men at his command to do the required work of cleaning up, rat killing, etc. But the board, being incompetent, talked much—and did almost nothing. The County Medical Society then stepped in, investigated the matter thoroughly, and by resolution called on the mayor to turn out the board of health and appoint a board that would really do something. On this the board resigned and the mayor appointed a board consisting of Drs. Thomas W. Huntington, William Ophüls, Dudley Tait, T. G. McConkey and Guy Manning. At the same time the mayor telegraphed President Roosevelt, asking that the United States Public Health and Marine-Hospital Service be placed in charge of the plague work; this was done and Dr. Rupert Blue, passed assistant surgeon, was detailed to take charge of the work.

EFFICIENT WORK IN SAN FRANCISCO.

Anti-plague work was energetically continued and extended; the supervisors were alive to the situation and appropriated from the almost bankrupt city treasury all the money demanded by the officials in charge of sanitary work. A bounty was placed on rats, alive or dead. The refugee camps were broken up and the nearby districts thoroughly cleaned. Where cases occurred in shacks or poor buildings these were destroyed, and every effort was made to wipe out each focus as it was found. So far as San Francisco is concerned, there seems to be nothing which the sanitarians in charge of the work ought to do that they have not done. But they are handicapped. In the first place, available city funds ran out; this was remedied by the federal government providing funds, through the United States Public Health and Marine-Hospital Service, to continue the work in the city. In the second place, the newspapers, while not following their former course of active and positive abuse, will not give that publicity to the matter which alone can arouse general interest and secure the cooperation of the people as a whole. When pressure is brought on them, they occasionally refer to the existence of "infectious disease" and mildly suggest the necessity for cooperating with the health authorities. In the third case, the commercial bodies of the community will not awake to the gravity of the situation and aid, by the contribution of funds, individual efforts at sanitation, rat killing, rat-proofing premises, etc.

DANGER OF QUARANTINE BY OTHER COUNTRIES.

There is not a rat-proof warehouse nor a rat-proof wharf in the city, and already Panama has refused to permit the introduction of grain foodstuffs coming from this port unless the same, if they have been introduced into the city, are certified as having been kept in a rat-proof warehouse or on a rat-proof wharf, by the United States Public Health and Marine-Hospital officer in charge, Dr. Blue. Thus far no steamship company has made a move in the direction of providing rat-proof wharfage, and that other countries will follow the lead of Panama, before long, is at least probable.

All ships, whether coastwise or foreign bottoms, are being carefully fumigated; the coast and river boats by the State Board of Health and foreign bottoms by the Public Health and Marine-Hospital Service, under the able direction of Dr. Hobdy. All steamers are required to use rat guards at docks and every precaution is being taken to prevent the passage of rats either to or from the city.

THE PRECAUTIONS IN OAKLAND.

In Oakland, Alameda County, nine verified cases and three suspects have been found to Nov. 30, 1907. It is possible that one or more of the suspects may be mild plague. The city is under charge of Dr. Long, United States Public Health and Marine-Hospital Service, who is under command of Dr. Blue. It has been divided into districts, as in the case of San Francisco, which are competently worked over by district officers and laborers. No dead body may be removed from the place of death until passed on by the authorized inspector; this measure, so essential to the detection of plague, is compulsory only in Oakland and San Francisco. The city council appropriated sufficient funds for an active fight, rat killing, a bounty on rats, etc., and the work has been pressed well and energetically. But as no cases have been found for a few weeks, the city council is becoming uneasy at the payment of money for further work and is liable to stop active anti-plague measures at any time. Berkeley and Alameda, the two towns on either side of Oakland (really forming, with it, one large city) are doing practically nothing to determine whether plague exists—or rather, where it exists, for there have been at least three cases in Berkeley—nor is examination of all dead compulsory. The Oakland city council has employed Dr. J. H. Howe to look after Alameda County and hunt down suspected cases of plague. The State Board of Health has employed Dr. W. H. Harrison to perform similar duties in Contra Costa County, and it has sent a circular to all physicians and others interested, recommending (but not requiring) that no dead be removed until they have been examined by the official sanitary inspector. It has also engaged Dr. Raymond Russ, of San Francisco, to do general inspection work, and when a suspicious case is reported in an outside town, he goes to the indicated place, makes an examination and reports to the state board.

THE INADEQUACY OF THE WORK.

In all, the state is employing five persons in the campaign against plague outside of San Francisco, and for the purpose of trying to determine where the outside foci are located; two of these six, however, are fully engaged in the work of fumigating coastwise and river craft. And this when the disease is known to have existed for 7 years and that there are established foci, whereabouts unknown, in the counties about the bay, liable at any time to extend the infection, if not constantly doing so. (On December 1, the governor is reported to have authorized the State Board of Health to increase its monthly expenditure from $1,500 to $2,000!)

In Contra Costa County some six or more cases are known to have occurred, some of which may have got their infection from San Francisco. As already pointed out, however, it is beyond contravention that plague exists independently in that county, and that there are foci in unknown locations. It is also almost certain that the squirrels are, and have been for at least three to four years, infected with plague. Compulsory examination of all dead—the only possible means of determining the presence or absence of plague—has not been enforced up to the time of writing, though it has been discussed by members of the State Board of Health. This is Dr. W. H. Harrison's territory, and he is a capable and efficient physician who will undoubtedly do all that one individual in so large a territory can do.

Rewards have been offered for squirrels, either alive or so recently dead that they may be bacteriologically examined, but without result. The squirrels go into their holes to die and there has been no systematic search, by digging out the holes, to determine over what area they have been dying or to secure dead bodies.

THE WASHINGTON SITUATION.

In Seattle, two cases have occurred and infected rats are reported to have been found. This is probable, for Seattle, being a seaport, is as liable to infection at any time as San Francisco or any similarly located city. The conduct of the anti-plague campaign has been placed in the hands of the Public Health and Marine-Hospital Service and will be conducted along the same general lines as that in San Francisco and Oakland.

ACTIVITY IN LOS ANGELES.

In Los Angeles a special appropriation was made by the city council some weeks ago, for the purpose of cleaning up the city, and active work is going on there now, consisting of abatement of nuisances, inspection of buildings and alleys, killing rats, etc. Compulsory inspection of the dead before removal has not been ordered, and consequently, it can not be positively stated that there is no plague infection in Los Angeles, though there is every reason to believe that the infection has not reached that city.

SACRAMENTO AWAKE.

In Sacramento all suspicious dead are examined, though whether the examining physician is a man experienced in plague work or not, is undetermined. The health officer, however, is a very watchful man. He attended a meeting of the San Francisco Board of Health, December 3, and intimated that Sacramento was seriously considering the advisability of quarantining all grain food stuffs, hay, etc., which may have been in San Francisco, unless the same are certified by the officer in command as having been stored under proper rat-proof conditions.

SAN JOSE FREE THUS FAR.

In San Jose the health officer advises that he is examining all suspicious dead and all dead orientals. No verified case of plague has been reported from there during the present epidemic. At least two cases of typical plague, though unverified, are known to have occurred in the Livermore Valley, and here, as in the cases previously noted, the direct relation between squirrels and the diseased patients was strikingly illustrated.

A NATIONAL PROBLEM.

The continued existence of such a disease over such an area, and for the time during which it is evident that the infection has existed here, would seem to make the infection a subject for national consideration and protection. Not only California, but the entire country should be grateful for the fact that the Public Health and Marine-Hospital Service has taken over the burden of expense for conducting the work in San Francisco, as the city has no available funds, and to allow the situation to develop would be a menace to the entire United States.

THE PEOPLE ARE ASLEEP.

It seems impossible to arouse the people from the lethargy, and to secure their cooperation in necessary sanitary work. As a consequence, the excellent work which the officers in charge are doing is, to a considerable extent, negatived.

SUMMARY OF THE PRESENT SITUATION.

To summarize the situation, we find that active and thorough anti-plague work is being done in San Francisco and Oakland, including inspection of all dead, isolation of all suspects, destruction of suspected infected material, clothing, etc., and the destruction of large numbers of rats by poison, Danysz's virus, trapping, etc. The sewer men report that they never saw so many dead rats in the sewers, so it may be assumed that a Danysz of high virulency has been prepared and put out. Nevertheless, while the number of cases seems to be somewhat on the decrease, in San Francisco, the territory over which the infection has spread is constantly increasing. Outside of San Francisco, something is being done; but in comparison with the danger of existing undiscovered foci, and of cases occurring which may and probably do go unrecognized, and of the great amount of work which the state should be doing, it is not encouraging.

The following tables are appended for the information they contain:

MARINE-HOSPITAL SERVICE STAFF EMPLOYED ON PLAGUE WORK, NOVEMBER, 30, 1907.

Commissioned officers, 8; acting assistants, 8; inspectors, 26; inspectors of the dead, 2; assistant inspectors, 25; foremen, 50; laborers, 250. In addition, the city has a sewer gang, and the usual staff of the Board of Health.

TABLE 1.—PLAGUE CASES AND SUSPECTS BY MONTHS.

	Suspects.	Suspects discharged.	Verified as plague.	Died.	Recovered.
May	1	..	1	1	..
June	..	..	..	..	..
July	..	..	..	..	..
August	16	..	13	6	..
September	69	..	45	22	1
October	66	21	29	24	20
November	42	8	21	13	12
Totals	194	29	109	66	33

NOTE.—It is extremely improbable that there were really no cases of plague in June and July; there were probably some unrecognized. The records prior to September 13 are too chaotic to be of value except for verified cases and deaths.

TABLE 2.—SUMMARY OF WORK DONE FROM SEPTEMBER 28* TO NOVEMBER 30, 1907.

No. of sick inspected	523
No. of dead inspected	638
No. of premises inspected	49,145
No. of houses disinfected	986
No. of houses destroyed	494
No. of nuisances abated	3,686
No. of rats found dead	7,281
(Smallest No. 435, largest No. 2604.)	
No. of rats trapped	19,362
No. of rats, bounty paid	6,251
No. of poisons placed	1,297,042
No. of rats bacteriologically examined	8,980
No. of rats found infected with *B. pestis*	31
Contacts inspected	408

* The systematic filing of this information was begun on the former date.

Baccelli's "Angle of the Scapula" Sign.—For some years Baccelli has been paying attention to the behavior of the upper inner angle of the scapula as a means of determining the presence of latent morbid processes in the lungs that escape all other methods of investigation. If a healthy person sits with arms crossed lightly in front, to relax the shoulders as much as possible, the head bent slightly forward, it will be seen that the inner upper angles of the scapula on each side move symmetrically in harmony as he breathes. This is best shown by drawing a line on the back, crossing the fifth or sixth thoracic vertebra, passing from axilla to axilla, and another short horizontal line, crossing the seventh cervical vertebra, connected with the first horizontal line by a vertical median line. The points where the inner upper angle of the scapula on each side reaches its highest point in the respiratory excursions are marked with an *x*, and the symmetry of these points at once attracts attention. In case of a morbid process in the lung, the scapula on this side does not rise quite as high, and the asymmetrical character of the movements of the two scapulæ shows at once something wrong beneath. This sign can be detected in some cases long before any other symptoms or signs attract attention to the lungs. Of course, preceding pleuritic adhesions, etc., may affect the movements of the scapulæ, and this source of error should be excluded before estimating the diagnostic value of the sign. In the *Policlinico* for September, C. A. Crispolti describes a typical case out of the extensive experience at Baccelli's clinic at Rome. A previously healthy young woman had presented symptoms for two months which suggested Malta fever, especially as it was known that she had come recently from an endemic focus. The pulse rate was found a little higher than normal and also the temperature and the positive findings of the angle of the scapula sign enabled the case to be presumptively diagnosed as one of incipient tuberculosis, although auscultation and percussion were negative at first, but soon became positive.

Clinical Notes

A CASE OF FATAL ANEMIA, SECONDARY TO PYELONEPHRITIS, IN AN INFANT OF ELEVEN MONTHS.*

HOWARD CHILDS CARPENTER, M.D.
Instructor in Pediatrics at the University of Pennsylvania.
PHILADELPHIA.

The following case illustrates the great importance of examining the urine of infants:

History.—Agnes M., a white infant, 11 months old, was brought to the medical dispensary of the Children's Hospital of Philadelphia, Sept. 13, 1907. The father was in good health and the mother was a well-nourished woman, but suffered from indigestion, and was of a nervous disposition. She had had ten children, nine of whom were living, and all were well except the patient. The baby, whose birth preceded the patient's, was born dead after a difficult instrumental delivery, due to some abnormal presentation. Two maternal aunts and one paternal uncle died of tuberculosis. The patient's birth was difficult, being a face presentation. The physician in attendance stated the baby weighed 12 pounds at birth, although he did not weigh the baby with scales. The patient since birth had been fed exclusively on the breast. The mother noticed nothing wrong with her baby until it was about three months old, when a friend remarked that the baby was pale. Since that time this pallor had become progressively more and more pronounced. From the onset of the pallor until the child was seen, a period of eight months, the patient had been under the care of the family physician, who treated the baby for anemia, prescribing various preparations of iron. The mother said that this baby had always been dull and not bright like her other infants. It had never shown any interest in anything; for instance, if given a rattle, it would not hold it for a moment. For the last six months its digestion had not been good and on various occasions for a short time it passed undigested milk in its bowel movements. One month previously the stools were green and contained a little mucus, but for the last week there had been no mucus in the movements. The baby had occasionally vomited. It had had several attacks of bronchitis since it was four months of age. For five days preceding admission to the hospital it had had a very severe cough, and every night during this time it had had fever. The baby cried or rather moaned a great deal, almost constantly. It slept very poorly, and was so weak it could scarcely move.

Physical Examination.—The most striking feature of the infant's appearance was its marked pallor, the skin looked waxy, and the conjunctiva and mucous membranes were blanched. The subcutaneous adipose tissue was fairly well preserved, but the muscles were soft and flabby. The face looked swollen, and the hands and feet, especially the latter, were edematous. The external lymphatic glands, that is, the cervical, axillary and inguinal, could just be palpated. The apex beat was not visible, and the area of cardiac dulness was normal. There were no adventitious sounds heard, no hemic murmur audible. Sonorous râles were present over both lungs posteriorly, but particularly at the left base, where a few subcrepitant râles were heard. The abdomen was soft, rounded and level with the chest. The liver was considerably enlarged, but the spleen could not be palpated. No abdominal tumor could be palpated. There was no evidence of vaginitis. The extremities were somewhat emaciated, the feet and hands cold and edematous. The bony skeleton was apparently normal. The baby weighed 12 pounds 13 ounces.

Urinalysis.—On September 14 the urinalysis was as follows: Quantity, ½ ounce; cloudy, yellow in color, containing many small flocculent particles; the specific gravity was not estimated owing to the small quantity of urine; albumin present, by heat and nitric acid, Heller's and Purdy's tests; 1/3 of a gram of albumin by Esbach's albuminometer. Microscopic examination disclosed a few broad hyaline tube casts; many pus cells; small polyhedral and caudate epithelial cells, also small round epithelial cells; large quantity of bacteria; a few red blood corpuscles.

On September 18 the urine was again examined, this time a catheterized specimen: Quantity, 2 ounces; cloudy, pale yellow; specific gravity, 1007; decidedly acid; no sugar; no excess of indican; albumin present; again 1/3 of a gram by Esbach's test. Microscopic examination showed only one hyaline cast; renal cells and cells from the pelvis of the kidney; many pus cells and bacteria; some red blood corpuscles; no crystals. Examination of centrifugalized urinary sediment for tubercle bacilli was negative. Examination of a cover-slip preparation of the sediment stained with aqueous methylene blue, showed the bacteria present to be almost exclusively a rod-shaped organism, which proved to be Gram-negative.

On this same day another catheterized specimen was obtained in a sterile test tube for bacteriologic examination. The plates made from this specimen contained almost a pure culture of the *Bacillus coli communis;* the only other organism I was able to isolate proved to be the *Micrococcus rugosus.* Only two cultures of this latter organism were seen on the three plates, all the remaining colonies being those of the *B. coli communis.*

September 19 I inoculated a 275-gram guinea-pig intraperitoneally with 2 c.c. of centrifugalized urinary sediment. Up to the present date, that is, over a period of three weeks, the pig is still apparently well.

(The urine presented a typical picture of pyelonephritis due to infection with *B. coli communis.*)

Blood Examination.—On September 14 I examined the infant's blood with the following result: Hemoglobin, 17 per cent.; red blood corpuscles, 805,000; white blood corpuscles, 8,480. Even with this extremely low percentage of hemoglobin, the color index is high, being 1.06 +. Examination of the stained specimen showed many megalocytes, microcytes and poikilocytes. There were numerous nucleated red cells, mostly normoblasts, but also several megaloblasts. The red cells were pale, there were many shadow cells, and polychromatophilic forms were plentiful. No plasmodia were seen. A differential count of the white blood corpuscles showed: Polymorphonuclear neutrophiles, 39 per cent.; small lymphocytes, 47 per cent.; large mononuclears, 10 per cent.; transitionals 3.5 per cent.; eosinophiles, 0.5 per cent. (Owing to the short time the patient was under observation, I only examined the blood once. The picture was characteristic of pernicious anemia.)

On September 18 the breast milk was examined. The mother nursed the baby exclusively from the right breast, as she had all her previous infants; the left breast had atrophied from disuse. The mother had abundant milk in the right breast. The specific gravity of the milk was only 1.021, and it contained 10 per cent. of cream, estimated by Holt's lactometer; this 10 per cent. of cream being equivalent to 6 per cent. of fat. The low specific gravity is accounted for by the excessive fat.

Milk Examination.—On September 19 a specimen of breast milk was obtained for bacteriologic examination. The nipple and surrounding epidermis were carefully rendered aseptic, and the milk was nursed directly into a sterile tube. From this specimen I made eight plates of various dilutions from 1/100 c.c. to 1 c.c. of the breast milk. The average count for the eight plates was 374 bacteria to the c.c. This is a high count to obtain from an apparently normal breast. From these eight plates I isolated five different organisms. These I identified as follows: 1, The *Staphylococcus epidermis albus* (Welch), a micrococcus which is commonly found superficially and deep in the skin; 2, the *Bacterium helvolum* (Zimmerman), an organism originally isolated from water and the air; 3, the *Bacillus subflavus* (Zimmerman), a motile water organism; 4, the *Micrococcus Freudenreichii* (Guillebeau); this is a well-known coccus found in milk and cheese; and 5, the *Mycobacterium lactis,* a rod resembling the Klebs-Loeffler organism. Its habitat is milk.

By far the greatest number of the colonies on the eight plates were those of the *S. epidermis albus.* There were only a few colonies of the other organisms present.

The infant only lived one week after coming under observation. During this time its condition changed but little; the weakness became even more profound, the infant nursing very feebly. The day before the baby died I weighed it before and

* Read before the Philadelphia Pediatric Society, Oct. 8, 1907.

after a twenty-minute nursing, the infant gaining only one-half ounce in weight, notwithstanding the fact that the mother had abundant milk in her breast. The bowels moved only once a day and the stools were fairly well digested, with no mucus. Twenty-four hours before death small petechia appeared on the abdomen and lower extremities. During the entire week the baby lay very still, too weak to move, moaning feebly at times, and sleeping only for short periods. The baby died without any change in its condition, simply sleeping away.

Autopsy.—September 21 I made the autopsy ten hours after death. The necropsy report follows: Body of a somewhat emaciated white infant. Postmortem rigidity was slight, there was scarcely any postmortem lividity. No decomposition, no wounds, bruises or scars, no cyanosis nor jaundice. Edema was present in both lower extremities. The subcutaneous tissue was light in color and the muscles were thin and pale. The viscera were all in normal position except the liver, which extended on the left side in the mid-clavicular line 5 cm. below the costal margin, and on the right side in the mid-clavicular line 5.5 cm. below the edge of the ribs. The sternum was normal, but the costal cartilages were slightly enlarged on their inner surfaces. The left pleura was normal. The left lung was air-containing throughout, except for a small area situated in the lower posterior part of the inferior lobe. This area was consolidated, and of a pinkish red color. Purulent fluid exuded from the small bronchi on pressure over this area of bronchopneumonia. Here the consistency of the lung was firm and crepitation absent. Macroscopically, there was no evidence of tuberculosis, and the bronchial lymph glands were not enlarged. The right pleura and lung were normal. The pericardium was normal. The heart measured 6 by 5 by 3.5 cm. This organ showed an advanced stage of fatty degeneration. The muscle was pale, reddish-yellow and was very friable. There were no congenital deformities or valvular lesions. The omentum was well developed and contained no tubercles. The liver was large, measuring 16 by 10 by 5.5 cm. Its surface was smooth and of a pale yellow color. The section surface was glistening, moist, smooth and homogeneously yellow in color. The liver showed a marked fatty degeneration. The gall bladder and ducts were normal. The spleen was normal in size, measuring 5.5 by 4 by 2 cm. Its shape was normal and it was firm in consistency. The surface section was a pale reddish brown. The follicles were quite prominent, but the trabeculæ were indistinct. There were no tubercles visible.

The right kidney was large, measuring 6 by 2.5 by 3.5 cm. It was lobulated and had a globular shape. There was abundant perirenal adipose tissue and no perirenal inflammation. The capsule stripped easily, the surface was smooth, the color at the upper end of the kidney was a deep red, while at the lower end it was yellow. The cortex was thickened, measuring 6 mm., the parenchyma showed an advanced chronic parenchymatous nephritis. At the upper end the section surface was glistening, opaque, and of a bright red color, while at the lower end it was dull, opaque and of a yellow color. The pelvis of the kidney showed a chronic inflammation, the epithelial lining was pale, thickened and covered with a purulent fluid. The kidney showed a chronic pyelitis and parenchymatous nephritis, with an acute inflammatory exacerbation at its upper extremity.

The left kidney was also large, measuring 6.5 by 4 by 4 cm. On palpating through the center, the kidney felt much increased in consistency. This kidney also presented a chronic parenchymatous nephritis; the parenchyma measured 7 mm. in thickness. One of the central pyramids was intensely inflamed; it was of a deep purple color. The pelvis of this kidney also showed a chronic pyelitis. The walls were thickened and the epithelium desquamated. Both ureters were normal.

The mucous membrane of the bladder was very pale and not inflamed. Over the posterior wall of the bladder the mucous membrane was wrinkled. There was no evidence of cystitis. There was no urethritis nor vaginitis. The uterus was very pale, the muscle and mucous membrane were perfectly white. The stomach was normal in position, the mucous membrane was pale and covered with a thin layer of mucus. The mucous membrane of the intestines was also very pale; there was no increase of lymphatic tissue and no ulceration. The mesenteric glands were normal. The pancreas was very firm and of a pinkish white color. The thymus gland was unusually small. I was not permitted to examine the brain or cord.

The small area of bronchopneumonia was undoubtedly a secondary infection from the kidney. I regret very much that no cultures could be made, owing to the fact that the body had been embalmed several hours before the autopsy.

This case of fatal anemia, secondary to pyelonephritis, demonstrates once more the importance of examining the urine of infants. It is an old observation, but one which is still frequently neglected among general practitioners. I do not hesitate to say that an early examination of the infant's urine would have demonstrated the cause of the anemia and led to appropriate treatment.

PARASITIC INFECTIONS OF THE BOWELS.

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The following is a report of a few cases of parasitic infection of the bowel supposedly uncommon to this section (Utah) of the country. I shall make no attempt to go into the clinical history of all of these cases but merely select a typical case from each of the three forms of infection I am reporting. Since April, 1906, I have seen one case of ankylostomiasis, three of trichomoniasis, eleven of amebiasis and one double infection with *Trichomonas intestinalis* and *Amœba coli dysenterica.*

ANKYLOSTOMIASIS

CASE 1.—*Patient.*—Male, single, white aged 24, occupation farmer. Born in Idaho.

History.—Family history was negative. In 1904 patient went to the southern states as a missionary and in November of that year began to feel weak and indisposed and gradually grew worse. His appetite was poor, bowels were regular, had slight nausea at times, but did not vomit; had no chills up to June, 1905. At that time he consulted a physician in Montgomery, Ala., who pronounced his case one of typhoid-malaria and prescribed accordingly. At this time patient complained of diarrhea, nausea and vomiting and "felt sick all over." Said he would like to die to end his misery. Being unable to continue his work, he returned to his home at Riverdale, Idaho, with the symptoms exaggerated. He improved slightly on home diet and mother's nursing for about three months when he again lost his appetite. Patient gradually grew weaker until March, 1906 when he consulted a physician in Preston, Idaho, who diagnosed the case as one of enlarged liver with symptoms of jaundice and prescribed accordingly. Treatment did not improve his condition so he came to Salt Lake City and April 18, 1906, he entered the Latter Day Saint's Hospital. I was asked to examine the blood for the malarial parasite, as the patient gave a history of malaria.

Examination.—On examination the patient was seen to be very weak, pale and anemic. The tongue was furred, the lungs normal, a hemic murmur could be heard over the base of the heart. The kidneys were normal. Patient was very listless, would sleep half the day, whether sitting or lying. Examination of the blood showed the following:

April, 1906.	18	21	23	25	27	30	June 2	5
Neutrophiles, per cent.	46	..	..	..	51	75	51	
Small mononuclear leucocytes, per cent.	18	..	..	..	27	8	10	
Large mononuclear leucocytes, per cent.	5	..	..	..	9	1	1	
Eosinophiles, per cent.	29	..	..	..	18	15	35	
Mast cells, per cent.	2	..	..	..	1	..	2	
Color index	0.877	..	..	..	..	..		
Hemoglobin, per cent.	22	25	31	31	34	46	47	58

From the characteristic eosinophilia a probable diagnosis was made of ankylostomiasis, the stools were later examined and the diagnosis confirmed by the discovery of ova.

Treatment.—The patient was put on appropriate treatment

and thousands of worms were passed, followed by speedy and complete recovery. The first dose of thymol given was not finely powdered and the results were negative but on repeating the dose I ordered it finely powdered and the results were satisfactory. I heard from this patient in August, 1907, and he was at that time in perfect health.

TRICHOMONIASIS.

CASE 2.—*History.*—The patient, a female aged 42, single, was by occupation a domestic. The family history was negative. She had always resided in Utah and for the past eight years had been troubled with diarrhea alternating with constipation. She had consulted several physicians who had told her that she had intestinal indigestion. The history, aside from this, was negative. For three months before I saw her, she had been troubled with diarrhea, colicky pains, indigestion, poor appetite and a feeling of general weakness.

Examination.—The patient was fairly well nourished, but anemic. The heart and lungs were apparently normal, the tongue furred and the abdomen tender. Urine examination was negative. The blood gave a hemoglobin percentage of 64. Examination of the stools showed large numbers of the *Trichomonas intestinalis*; no other organism was found.

AMEBIASIS.

CASE 3.—*History.*—The patient a male, aged 30, married, was by occupation a photographer. Family history was negative. He had always resided in Utah, though for a short time one year previously he had been in Idaho. He had one or two previous attacks of diarrhea within the past five or six years. Otherwise the history was negative. Seven weeks before he was seen, he had passed blood from the bowels and the bleeding was associated with diarrhea and the passing of some mucus. He consulted a homeopathic physician who treated him for hemorrhoids by the injection method, but as he grew weaker he went to a regular physician who pronounced the condition one of abscess of the rectum and advised an operation. This was refused and the patient came to Salt Lake City to consult other physicians. He was referred to me and after going over the history of the patient and making a careful physical examination I reached the conclusion that it was a case of *amebiasis*. Repeated examinations of the stools by myself and my laboratory assistant confirmed this diagnosis.

From these cases it will be seen that these parasitic diseases of the intestines are more common to this part of the country than is commonly thought, and the fact should inspire us to make more careful examinations of our patients and to leave nothing undone that will help us to arrive at a correct diagnosis.

217 I Street.

A CASE OF APPENDICITIS, ASSOCIATED WITH HYPEREMESIS GRAVIDARUM.

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TUCSON, ARIZ.

While I have no idea of advocating the removal of the appendix as a cure for pernicious vomiting of pregnancy, I take this opportunity of calling attention to the fact that an inflamed appendix may at times be a form of peripheral irritation sufficient to cause hyperemesis.

History.—The patient, a primipara, aged 20, gave the following history when she first came under my observation: There had never been any marked irregularity in menstruation, although she was hysterical and had somewhat marked exacerbations at the periods. For two years previous to my first visit there had been occasional attacks of cramps, with pain in the region of the appendix, attended with vomiting and fever. A diagnosis of appendicitis had already been made by other physicians and operation had been advised. When I saw the patient she was about four months pregnant and had had repeated attacks since conception had taken place. She vomited incessantly both during and between attacks and her general nutrition had suffered markedly. She was bedridden, her tongue dry and brown, pulse 120, temperature 103 F. In a few days the symptoms subsided—all but the vomiting—but almost immediately another attack supervened and the patient was removed to the hospital for operation.

Operation.—This presented no particular difficulty. The McBurney muscle-splitting incision was made, the appendix ligated, and invaginated with a purse-string suture. Although deeply congested and indurated there were no adhesions. The appendix was about 9 centimeters (3½ in.) in length, and on laying it open presented a necrotic occlusion involving the mucous membrane, situated about 3 centimeters (1¼ in.) from its distal extremity, beyond which was a pocket containing about 3 grams of bloody pus. The uterus and adnexa were normal.

Postoperative History.—Immediately following the operation the vomiting practically ceased; there being no more than is ordinarily experienced after ether anesthesia. Nevertheless, there was some vomiting until the third day, when a satisfactory bowel movement not having been attained by enemata, a free evacuation followed the administration of fractional doses of calomel. Thereafter the vomiting ceased entirely and did not recur. The skin was closed with subcutaneous catgut suture and had entirely united by the eighth day. There were no apparent uterine contractions and not the slightest threat of abortion. At this writing, two months after operation, the gestation is progressing normally.

ATTACKS OF SYNCOPE, VERTIGO AND APHONIA OF UNCERTAIN ORIGIN,

POSSIBLY DUE TO LIGHTNING STROKE.

J. A. PALMER, M.D.
ERIE, KAN.

The following case presents a syndrome, apparently either of intracranial or intrathoracic origin, the genesis of which seems very difficult to explain.

History.—A. A., aged 54, married, a carpenter and farmer, was born in America. The family history was negative. He had had no severe illness in childhood, although never considered exactly strong, and he says that as a boy everything seemed to go to his head. He had no injury in early life and his habits had been good. At the age of 31 he had an attack of acute inflammatory rheumatism from which he recovered. Fifteen years ago he was shocked by a stroke of lightning, but after a few minutes recovered so that he was able to ride one of his horses to the barn, although for twenty-four hours he was dazed or partially stupefied. About a year after this the first symptoms of the present trouble appeared, with pain and tenderness in the posterior occipital region, which were at first confined to a spot about the size of a silver dollar.

Six years ago on rising to close a door he fell forward, striking but not injuring his head. After a few minutes he arose with assistance, but his mind was confused all that night. All that fall he had more or less vertigo. Three years later he suddenly became unconscious and fell from his wagon striking on his head and neck. After about ten minutes he got up and drove his team to the house. From this time he experienced pain and tenderness over the spinous processes of the cervical vertebræ, and these symptoms had extended to the middle of the dorsal region, although the suffering was not as severe as in the cervical. At the time of the last injury aphonia appeared and has followed subsequent attacks, the voice being reduced to a whisper for several days. There was no interference with deglutition, but a constant desire to swallow. The patient said he could tell when he was about to lose his voice by a feeling commencing in the back of his neck. Several attacks had occurred since the time of his last injury. When seen he complained of a feeling of vertigo on assuming the erect position or on lying down, which passed off in a few

moments. The vertigo was more severe on lying down; the patient felt as if he himself were moving.

Examination.—The patient was well nourished and not of a nervous type. Height 6 feet, weight 190 pounds. The muscular system was well developed, with no excess of adipose tissue; he walked firmly with erect posture and did not readily tire. The skin was normal, with the exception of two small patches of eczema on one leg; he was almost bald. He had a slight tendency to suffusion of the face. There was no evidence of syphilis. The eyes and ears were normal; there was no deafness nor tinnitus. The pupils were equal, slightly contracted, but responded to light and accommodated to distance. There was occasional congestion of the sclerotic. Vision was 20/40 in each eye. The larynx was free from symptoms except when aphonia was present. The lungs and heart were normal. The pulse was 80, soft, compressible, but of fair volume. An intermission of the radial pulse was noticed several times, but this was not a constant condition. There were no disturbances of sensation and the nutrition, tone and power of the muscles were unimpaired. The superficial reflexes were normal, but the patellar reflex and also the wrist jerk were absent; the knee jerk could not be obtained by re-enforcement. Vasomotor and trophic disturbances were absent. The motor and sensory powers of the glossopharyngeal were normal. Romberg's symptom was negative and no other symptoms of ataxia were present. Urinalysis showed a sp. gr. 1.022; color, light straw; normal amount; reaction neutral; neither sugar nor albumin; no sediment.

EPIDIDYMO-ORCHITIS COMPLICATING TYPHOID FEVER.

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BIRMINGHAM, ALA.

The following case is reported because epididymo-orchitis is a comparatively rare complication in typhoid fever, being discussed by most writers as orchitis, occurring after convalescence has begun, and usually with a previous history of specific urethritis. This case is unusual in its differences.

History.—L. B., white, male, aged 25, book-keeper, was seen Sept. 28, 1907. The family history was negative. He was of good habits and did not use alcohol or tobacco. He had had the diseases of childhood but no serious illness. He positively denied a history of urethritis or other venereal disease. His present illness began with an attack of typhoid fever of mild type beginning six weeks previously. Temperature reached normal on twentieth day. Four days later, after indiscretion in diet, he suffered a relapse. This was uneventful with the exception of frequent attacks of marked pain over a greatly enlarged spleen until the nineteenth day of the relapse when the temperature appeared to be decreasing. On the morning of this day the temperature, which had been following a downward curve from 103 F., had reached 99.2 F. In the afternoon it was 102 F. and the following morning 103.5 F. At this time patient complained of dull, aching pain in scrotum.

Examination.—Examination revealed an enlarged, purplish-red scrotum. The right testicle was twice its normal size and exquisitely tender. The following morning, the temperature was 103 F., the testicle had increased in size, with tenderness most marked over the postero-inferior pole and along the enlarged spermatic cord. The testicle and epididymis now formed a mass the size of a goose egg.

Treatment.—Under treatment consisting of elevation and evaporating lotions of lead water and laudanum, the condition began to subside and three days later, after a septic run, the temperature reached normal. The patient's convalescence and recovery was otherwise uneventful.

Since the urinary examination was negative, it seems probable that the infection was due to the typhoid bacilli and through the vascular route. It is a mooted question as to whether the epididymis or testicle bears the primary infection. From examination it seems probable the testicle was first involved here. The prognosis in this condition is good inasmuch as suppuration is rare. The treatment is that of an ordinary orchitis.

416 Woodward Building.

A HELP TO HEMOGLOBIN DETERMINATION.

MATHEW A. REASONER,
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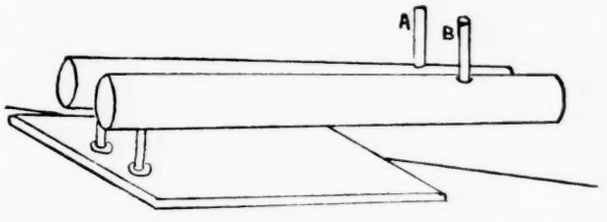
LA PAZ, LEYTE, P. I.

The following method is suggested as a help to more accurate results with the Gower, Sahli and Haldanes hemoglobinometers. So far as I know it has not been otherwise described or used.

The beginner will frequently have trouble in determining the exact point when the dilution tube reaches the standard color. This difficulty is due partly to reflections and the lens effect of the tube as well as to distractions of the surroundings and is, of course, increased in those having a defective color sense.

I suggest the use of two mailing tubes 2½ inches in diameter and 14 inches long, coated black on the inside and one end covered (the objective) with black paper having a pin-hole orifice centrally located. Three



Arrangement of tubes for use in hemoglobin determination. A, standard tube; B, mixing tube.

inches back from this end, in each mailing tube, an opening is made which will just permit the standard and dilution tubes to enter at right angles (see illustration).

Placing the open ends of the tubes to the eyes and directing them toward the light, images are obtained that are equally lighted and from which all extraneous reflections are eliminated. By rotating the tubes slightly inward the two images may be made to impinge one on the other and a more accurate comparison secured.

This device would be more satisfactory if the tubes were made of substantial material and so mounted on a base as to pivot at the ocular end.

Treatment of Ankylostomiasis.—J. Codina Castellvi writes from Spain to the September *Revue de Méd.*, to relate favorable experiences with beta naphthol treatment in 24 cases of ankylostomiasis. He agrees with previous investigators who report it harmless, remarkably effectual and free from by-effects, even when given for three or four days. Changes in lungs, heart or liver are no contraindication to its use. The dose was 2 gm., half taken at 6 a. m. and the balance an hour later, after a saline purge the evening before. Two hours later a purge is taken consisting of an infusion of senna leaves, 300 gm.; sodium sulphate, 30 gm., and syrup of rhubarb, 30 gm., this having been found the best prescription for completing the cure. Enormous amounts of the parasites are expelled the first day. He gives the tabulated findings in more than a hundred cases in respect to the products of the metabolism under treatment with male fern, with eucalyptol and wi h beta naphthol, the findings all proclaiming the superior efficacy and harmlessness of the latter.

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SATURDAY, DECEMBER 14, 1907.

PARATYPHOID AND FOOD POISONING.

There are three great groups of food poisoning in consequence of bacterial contamination. The first is botulismus or intoxication with a genuine bacterial toxin, namely, that produced by *Bacillus botulinus*. The most characteristic symptoms are paralysis of the pharyngeal and ocular muscles and other nervous phenomena. The bacillus in question grows only under strictly anaërobic conditions, and the poison is definitely destroyed when articles containing it, such as sausage, hams and canned goods, are heated to 70 degrees C.

The second group results from the development of putrefactive bacteria in originally wholesome foods, and the organisms at work must frequently belong to the proteus group.

The third group, to which attention is now especially directed, is caused by bacteria belonging to the hog-cholera groups. Clinically, the cases are usually characterized by acute, stormy onset mostly with chills and high fever, severe and sometimes uncontrollable vomiting, violent diarrhea, cramps in the legs and rapid loss of strength. Occasionally the course is milder and more like that of typhoid fever. This form of food poisoning, which most frequently develops from eating contaminated meats, has been studied especially in Germany. Bollinger, so long ago as 1876, pointed out that four-fifths of all the cases of food poisoning result from the use as food of the meat of animals slaughtered when suffering from various forms of septic infection, such as puerperal septico-pyemic processes, inflammations of the udder and infectious gastrointestinal catarrh. The bacteriologic studies which led to the definite establishment of a distinct and very important form of food poisoning began in 1888, when Gärtner isolated a well-defined bacillus from the milk and from the meat of a cow slaughtered while suffering from gastroenteritis and from the spleen of a person who died after eating this meat. Salmon, then in Washington, described the bacillus of hog cholera in 1886, and for this reason Lignieres has proposed the name of "Salmonelloses" for all the various bacilli that fall into this general group. During the succeeding years a large number of meat poisonings were traced back to the use of meat of animals infected with *Bacillus enteritidis gärtner*. In 1900 Durham pointed out that the bacilli in certain epidemics of meat poisoning did not correspond to all the tests for the Gärtner organism, and this observation led to the establishment of a subgroup in which the poisoning is caused by paratyphoid bacilli of the type B.

Numerous instances of meat poisoning have been traced to infection of animals furnishing meat with these paratyphoid bacilli, and the bacilli have also been held responsible for poisonings following the use of milk (in one instance fifty persons were poisoned by the milk of cows suffering from gastroenteritis, and the milk was found to contain paratyphoid bacilli), beans and also by fish. In most of the recorded instances the meat which gave rise to the poison was derived from animals, principally cattle, occasionally swine, which were slaughtered while sick and sometimes when dying from diseases like those already enumerated. Paratyphoid bacilli have been isolated from the organs and tissues of diseased animals, and it is clearly established that under certain circumstances animals from which we obtain food are subject to infection with paratyphoid bacilli. These infections appear to occur only sporadically, and the special conditions necessary for their development are not yet clearly understood. Of course the possibility can not be denied that originally healthy meat may become contaminated with paratyphoid bacilli at such time before it reaches the consumer that sufficient multiplication takes place to cause infection or intoxication. In naturally infected animals the bacilli at some time or another surely enter the circulation and cause abscesses in the muscles and other focal lesions which may not be detected, even when rigid inspection is the rule at slaughter. Naturally the organs of such animals are also dangerous as well as the milk.

In the majority of cases of poisoning due to paratyphoid bacilli it concerns an actual infection with bacilli in addition to intoxication with substances derived from them. This intoxication probably manifests itself in the severe symptoms often characteristic of the beginning of the attack. Paratyphoid bacilli as well as the Gärtner bacillus form toxic substances that are able to resist high temperatures and which in smaller animals cause diarrhea and convulsions. These substances may be present in the meat of the diseased animal when slaughtered, and when bacilli are also present in the meat they may have abundant opportunity to multiply freely before the meat is prepared for food and thus produce large amounts of the toxic substances. The paratyphoid bacilli themselves are killed only after heating to 70 degrees C. for ten minutes or more, and this fact explains how infection of the consumers of improperly cooked meat may take place. When only a small number of bacilli are introduced it is thought that the milder form of the disease, a form of so-called paratyphoid fever, may develop, and in some of the epidemics both the clinical forms have been observed. Lentz, who has studied 200 cases of paratyphoid infection, saw in about 40 per cent. the typhoid-like course, while in the

others the attack began suddenly with high fever and chills. It is interesting to note that in cases of paratyphoid intoxication herpes of the lips and nose is relatively common, and there may be roseola with large spots; there are rarely ulcers in the intestines; as a rule there is a pronounced, often hemorrhagic, enteritis.

Taking it all in all, it is safe to say that one of the most important chapters of the special hygiene of foodstuffs is that dealing with the prevention of paratyphoid meat poisoning. Naturally prevention is sought first in rigid, skilled inspection of animals slaughtered for food and the condemnation of all suspected or found to be so diseased that the use of their meat and products thereof may cause poisoning. This may be a difficult task, and it has been recommended in order to make the inspection still more rigid that the temperature of every animal be taken before slaughter and that all those with abnormally high temperatures be set aside for special investigation. The great danger from the using as food the meat of sick animals slaughtered on the farm without skilled inspection is at once apparent. Physicians should remember that in all cases of food poisoning the meat and meat products used merit particular investigation.

THE ANTITYPHOID SERUM OF CHANTEMESSE.

Among the attempts to perfect an antitoxic or bactericidal serum for typhoid fever the work of Chantemesse has proved the most successful. His recent report on the subject[1] is most encouraging, covering as it does the work of six years, so that the element of variation in virulency of the disease at different periods is eliminated. He reports that in the 1,000 patients subjected to this method of treatment during the past six years the mortality was 4.3 per cent., while the mortality in the 5,621 patients treated at the other hospitals of Paris during this period was 17 per cent. These patients all received hydrotherapy in addition to the serum treatment to control the temperature. In the hands of Brunon and of Josias this method gave equally good results, and at the military hospital of Val-de-Grace there were but five deaths in ninety cases so treated, the mortality for the preceding six years, before the introduction of the serum treatment, being 10.6 per cent. Chantemesse emphasizes the importance of using the serum as early as possible, stating, in fact, that he has never seen a fatal result when the patient received the serum within ten days of the onset of the disease.

The serum of Chantemesse is obtained from horses, which for long periods have been subjected to typhoid toxins, in the form of filtered and sterilized cultures grown on bouillon of beef spleen, hypodermically administered. The dose of the serum is from one to five drops, given under the skin. After such an injection there follows a period of reaction, when the temperature seldom falls and frequently is somewhat elevated. The general condition is not improved during this reaction, which lasts from a few hours to several days. Chantemesse regards this phenomenon as the result of the destruction of the bacilli in the body and the consequent release of an additional amount of toxin. A study of the influence of the serum on the opsonic power of the blood indicates that the bactericidal action of the serum is in large part due to its stimulating effect on this phenomenon. The opsonic index is found to be increased to a greater degree in severe infections than in the mild ones, and for this reason Chantemesse advises using a minimum dose of the serum in severe cases, as the greater the bactericidal power of the blood the greater will be the reaction.

Following the period of reaction comes a period of defervescence, when the temperature falls gradually and the condition of the patient is in every way improved. The pulse is slowed, the blood pressure raised, the quantity of urine is notably increased, and the patient feels much more comfortable. The temperature usually continues to fall for ten or twelve days, when it may remain stationary for a few days and then go on to a rapid convalescence or a mild relapse. The influence of the serum seems to have been exhausted by this time, and a second injection may be required. An interesting observation was a very definite increase in the splenic dulness which is seen after about twenty-four hours. This is part of a general stimulation of the lymphoid and myeloid tissue which has been shown to be the result of the serum in experimental animals.

The work of Chantemesse seems to promise much in this field, for should the ophthalmo-typhoid reaction described by him prove reliable as an early diagnostic sign it would render possible the use of the serum at a stage of the disease when this form of treatment offers the most hope.

1. L'Hygiène Gén. et Appliquée, October, 1907.

DIET AND HEALTH.

Perhaps the most significant feature of medical progress in the last century has been the development of preventive medicine which has made possible the elimination of many epidemics which formerly scourged mankind. The means of prevention of metabolic and nutritional disorders have not been so well developed, but accumulating evidence indicates that the dietetic habits of mankind are responsible for some of these maladies. In these cases prevention is less practicable because it is to a large extent individual and thus outside the sphere of governmental control; the foundation for such disorders is laid during the years of apparently good health and the disease is usually well established before the need for a change in the dietetic habits becomes evident. In addition it must be admitted that the ideas of the medical profession in general in regard to dietetics have lacked precision. While there has been a general impression that too free use of meat is injur-

ious, and that people in general eat too much, such impressions were not sustained by a comparison of the actual diet of the people with the standards laid down by the text-books as to the daily requirements of the individual for proteids and total calorific value of the diet.

The work of Chittenden and others has demonstrated that in contrast to the ordinarily estimated requirements of from 100 to 125 grams of proteids it is possible to live and to do active muscular work on a diet containing not more than 50 grams of proteid, and that such a diet is advantageous to the general health of the individual. That it is possible to do this for years is shown by the experience of Mr. Fletcher, who was one of the subjects of experiment at the Yale gymnasium in 1903 and again in 1907. Mr. Fletcher, having become convinced of the desirability of restricting the amount of food and of masticating it very thoroughly, had for some years accustomed himself to a diet which averaged about 60 grams of proteids and yielded about 2,800 calories. On this diet he showed in 1903, under severe tests in the gymnasium, a strength and an endurance which were considered remarkable for a man of his age, then 54. In the current number of the *Popular Science Monthly*[1] Professor Chittenden gives an account of the recent tests made on Mr. Fletcher in June, 1907. During the four years since the former test Mr. Fletcher had followed his special diet, but had not taken any training nor any strenuous exercise since February, 1907. On two occasions only during the past year had he done hard work in emergencies, once while following Major General Wood in the Philippines in climbing a volcanic mountain through a tropical jungle on an island near Mindanao for nine hours, and once while wading through deep snow in the Himalayan mountains, some three miles one day and seven miles the next day in about as many hours. These two trials represented climatic extremes, and Mr. Fletcher states that neither the heat nor the cold gave him discomfort, a significant fact in estimating physical condition.

In tests made with the dynamometer Mr. Fletcher was able to lift 300 pounds (three-fourths of his total strength) 350 times without reaching the limits of his powers. The result of similar tests on eighteen Yale students, most of whom were trained athletes or gymnasts, showed an average of 87.4 lifts, the extremes being 33 and 175 lifts. Thus Mr. Fletcher doubled the best record made by any trained athlete, and numerous subsequent tests have failed to increase the average of these students. After the work with the dynamometer the nervous control was so good that Mr. Fletcher could hold a glass brimful of water in either hand without spilling any. This is a remarkable showing for a man nearly 60 years of age. There was not the slightest evidence of soreness, stiffness or muscular fatigue, either during or after the six days of the trials. Dr. Anderson of the Yale gymnasium says: "During the thirty-five years of my experience in physical training and teaching I have never tested a man who equalled this record. The latter tests, given in June, 1907, were more taxing than those given in 1903, but Mr. Fletcher underwent the trials with more apparent ease than he did four years ago. What seems to me a most remarkable feature of Mr. Fletcher's tests is that a man nearing 60 years of age should show progressive improvement of muscular quality merely as the result of dietetic care and with no systematic physical training."

The progressive improvement in Mr. Fletcher's muscular power is remarkable and seems fairly attributable —at least in part—to his dietary habits. The extremely complete mastication to which he submits his food may contribute to the result and, although it is possible that he carries this idea too far, there is no doubt that better mastication of food would prove a benefit to the majority of people. At any rate, the important fact is that he has shown that he can thrive on a diet containing not more than half the amount of proteid food demanded by ordinary dietary standards. That a man, by careful attention to his diet, can gain in endurance and general efficiency after 50 without systematic training is well worth knowing.

These results show that the subject of diet demands more of our attention. Physicians should impress on the public and on the individual the important fact that too much food, especially too much meat, is eaten by a considerable portion of the population. Not only should this general truth be impressed on people, but the physician should realize that the mere statement of the fact will be of little use, for most laymen and many physicians have no adequate conception of what amounts of food are necessary to furnish fifty grams of proteid. The details must be worked out in a way for practical application and the instruction be made specific, as has been so well done, for example, in the article we recently published by Dr. Irving Fisher.[2] The cause of the gormandizing habit might form the theme for interesting philosophic speculation, but the more important question concerns the economic and pathologic aspects of this gastronomic intemperance. Economically the reduction to the lower level advocated by Chittenden would secure a saving of from one-third to one-half the amount at present expended for food—a sum of no little moment in these times of fierce industrial competition.

The pathologic aspects of overeating have received considerable study, but the results of this study would doubtless be greatly modified if the lower standard for proteids were adopted. The objection that such a diet necessitates vegetarianism is not tenable, for the diet can be so chosen as to admit a small amount of meat without exceeding the proper amount of proteids. Our present knowledge will necessitate a change in several pop-

1. December, 1907.

2. THE JOURNAL A. M. A., April 20, 1907.

ular conceptions, both lay and professional, regarding the value of different kinds of food. The belief that there is something especially strengthening and nutritious in meat is not well founded. The physician must not, however, forget the need of the growing organism for a relatively large amount of proteid. The idea that milk is a perfect food for the adult must be relegated to its place among exploded notions. The function of a perfect food is much more nearly fulfilled by bread with its natural complement of butter.

The experiments of Chittenden and others with their eminently practical bearing should furnish a strong incentive for the practicing physician to give especial attention to the study of dietetics so that he may appropriate and put to practical use the latest developments of physiologic research. The great trouble, however, is that the literature on the subject is very scarce; this undoubtedly will soon be remedied, since there is developing such an interest in the matter.

THE PRESENT PLAGUE SITUATION ON THE PACIFIC COAST.

The history of latter-day plague outbreaks emphasizes certain dangers of that disease to which too little attention has hitherto been paid: first, the existence of an extreme variation in the susceptibility of individuals; second, a similar variation in the malignancy of the disease. Both of these variations are dependent on qualities as yet undetermined, but abundant instances are on record to show that they are real. Yet another danger is the tendency of plague to "lie low" for a while, as it were, to recur and recrudesce sporadically in a given community. And, finally, there is the danger of its great transportability through the medium of indirect, as well as of direct, infection. Of this also there is ample evidence. It becomes, therefore, a matter of the gravest concern when sporadic foci are found in any country—however destitute apparently the disease may appear to be of epidemicity for the time being—not only lingering on and recrudescing at intervals, but continually widening its encroachments into neighboring territory.

Hints having reached us that the situation as to plague along the Pacific coast was not altogether satisfactory, we appointed a special commissioner to investigate as to what the conditions actually are and what steps are being taken to cope with them. Elsewhere in this issue[1] we publish his report. It will be noted that the disease, which first appeared in this country in San Francisco (all seaports, especially those in regular and direct communication with plague-infected countries, are particularly liable to its importation) while it appeared to have been practically stamped out in that city for some three years, namely, from February, 1904, to May, 1907, has again made its appearance therein. But, as was only to be expected, and as, indeed, we long ago warned, plague foci are now found over a wide territory up and down the Pacific coast, extending even as far north as Seattle. Knowing as we do that one of the chief means of propagation of the disease is by rats and possibly other rodents (indeed, according to our commissioner's report, ground squirrels have of late been definitely connected with the disease), it is clear that the absence of an epidemic and the speedy exhaustion of an outbreak with a few cases only in human beings, by no means indicates that the district is necessarily free from the disease; for its ravages may be still extending far and wide among the rodent inhabitants and piling up explosive material that only awaits the necessary spark for its discharge.

There is no occasion to take an alarmist view of the situation, for it is clear from our report that efforts toward the extermination of the plague are being made far more widely and vigorously now than during that past period of culpable neglect, indifference and even opposition, in San Francisco, to which is doubtless due the present extension of the disease up and down the Pacific coast. It is time, however, in its own interests, no less than in those of the entire country, that the public of the Pacific coast should awake from a state of comparative indifference to the slumbering volcano of pestilence over which it lives, and, instead of resting content with keeping it in check by disinfection, fumigation and general sanitation, should address itself in hearty cooperation with the health authorities, local and federal, to the task of extirpating it, root and branch, by vigorous measures for the extermination of rodents and by insistence on compulsory inspection of all dead bodies in neighborhoods where a case of plague is either known or suspected to have occurred.

1. Special article on page 2000.

AROUSED PUBLIC SENTIMENT.

The oft repeated and perhaps generally accepted statement that it is impossible to arouse public opinion on sanitary questions is being strikingly refuted, as shown by the editorial notices given by papers throughout the country to the work which Dr. J. N. McCormack is doing in awakening public sentiment along these lines. During the past week one newspaper, commenting editorially on his address at Yale, says: "Dr. McCormack is not presenting anything new but is seeking to bring public interest to the point of action on conditions, the remedy for which is well understood, but which has not so fully appealed to public interest as to invoke the degree of action which is due." After commenting on some of Dr. McCormack's statements, especially those referring to contagious diseases and their effects, the editorial says: "There is no possible excuse for allowing these constant contributions to the death roll to go on after we have spotted their identity and know where to strike to cut them off. Indifference on such subjects is criminal. If public opinion were thor-

oughly awakened to the perils, the death rate for the entire country might be reduced by the saving of hundreds of thousands of lives yearly. Is it not possible that these things be universally understood? The American Medical Association calls for a national awakening on the subject." Another newspaper, commenting on the same address, says: "It is not doubted that we have not grown sanitary as rapidly as we have grown economic and materially advanced. The public interest of America is slow to arouse to a sense of danger from unsanitary conditions. We have lost largely in this business of fighting diseases successfully. The whole of us are slow to take any interest in general movements to be made by the government in the matter of preventing preventable diseases." The significance of these editorial extracts will be understood when it is known that neither of the papers quoted is published in a town in which Dr. McCormack has ever spoken. Both are published over a thousand miles from New Haven. Evidently the interest of the editors was aroused purely from the newspaper reports of the Yale meeting. If such an interest can be awakened and such a report elicited by the telegraphic reports of the speech of one man, what can not be accomplished if every county society takes up this work enthusiastically, energetically and wisely? Surely there is not a single county of any size in the United States in which there is not at least one editor sufficiently public spirited to endorse and support such a work when it is once thoroughly understood.

LICENSE REVOKED FOR IMPROPER LIQUOR PRESCRIBING.

The Indiana State Board of Medical Registration and Examination recently revoked the license of a physician for giving prescriptions for whisky to persons who wanted it only as a beverage, and to evade the local laws. There was a clear case against this physician, his offense being flagrant and repeated. The instance is a warning to other physicians who are careless—not to use a stronger word—to stop and think before ordering liquors without real medical reasons; the mere satisfying of a toper's craving affords no such excuse. There may be some members of our profession, however, who, from associations and training, have an inadequate appreciation of the position in which they place themselves by giving such prescriptions in prohibition districts or on days when the law prohibits the sale of alcoholic drinks. It will be well for these men to bear in mind the fact that they will not be asked to prescribe liquor under such circumstances except for the purpose of evading the law, and that by doing so they become active participants in the evasion of law and put themselves below the moral and social level of bartenders. A physician who, from thoughtlessness, or possibly from convivial sympathies, is disposed to favor such requests and does so, can not reasonably complain if he is charged with unprofessional conduct and has his certificate revoked. If he does it simply for profit he is deserving of the fullest penalty the state board or the law can inflict, and we hope that the powers authorized so to act will remove from practice all who so debase their calling.

THE INFLUENCE OF VACCINATION ON PERTUSSIS.

Vaccination against smallpox has usually been regarded as inadvisable during the course of any infectious disease, as it is supposed to complicate the disease itself and in the lowered condition of the patient may "take" with quite unnecessary vigor. This is particularly true of scarlatina, as Jezierski[1] has pointed out. A number of French clinicians, however, have observed that in the case of pertussis, instead of complicating the condition, vaccination seems to have a beneficial action and, in fact, may prove curative in a considerable proportion of cases. Attention was drawn to this point by Amat in a communication to the Société de Thérapeutique in April, 1907, and since that time Bolognesi and Laborderie[2] have published studies on the subject which tend to corroborate this view. Bolognesi holds that if the child has been previously successfully vaccinated a revaccination is of no therapeutic value in pertussis, but Amat and Laborderie have both obtained good results whether it was the first vaccination or not if the vaccination were successful. Their combined experience shows that in a fairly large proportion of cases children having pertussis who are successfully vaccinated show a marked improvement within a day or so of the development of the pustule and are completely cured in one or two weeks. The rationale of this procedure has not yet been explained.

THE PRESIDENT ON PUBLIC HEALTH.

In the annual message of President Roosevelt appeared the following paragraph, which will be of special interest to the medical profession, as well as to all others who are interested in the promotion of public health legislation:

> There is a constantly growing interest in this country in the question of the public health. At last the public mind is awake to the fact that many diseases, notably tuberculosis, are national scourges. The work of the state and city boards of health should be supplemented by a constantly increasing interest on the part of the national government. Congress has already provided a bureau of public health and has provided for a hygienic laboratory. There are other valuable laws relating to the public health connected with the various departments. This whole branch of the government should be strengthened and aided in every way.

While this constitutes an endorsement of public health measures, yet one is led to conclude that while President Roosevelt is heartily in favor of all measures for the advancement of public health in the abstract, he has not yet given as much attention to the details of the question or to the proposed plan for the organization of a national health bureau as he has to many of the other subjects discussed in his message. It is earnestly hoped, however, that during the coming year the President will give the matter of federal public health legislation serious and careful consideration, for surely when the facts are brought to his attention and properly impressed on him we may look for as specific and as positive recommendations along this line as those which he has made on irrigation, deep water ways and the preservation of forests.

1. Jahrbuch. f. Kinderheilkunde. lxiv, No. 2.
2. Bull. Gén. de Thérap., Oct. 23, 1907, No. 2.

Medical News

CONNECTICUT.

Diphtheria.—Diphtheria has again appeared in Southington and precautions are being taken by the local health officers to check the progress of the infection.

Corporators for Hospital.—At the annual meeting of the New Britain General Hospital held November 11, an amendment was passed allowing an increase in the number of incorporators to 75, and 6 directors were elected.

Communicable Diseases.—During October there were reported to the State Board of Health 33 cases of measles from 11 towns; 101 cases of scarlet fever from 28 towns; 9 cases of cerebrospinal fever from 7 towns; 224 cases of diphtheria from 46 towns; more than 40 cases of whooping cough from 7 towns; 229 cases of typhoid fever from 52 towns, and 55 cases of tuberculosis from 20 towns.

October Deaths.—During October 1,322 deaths were reported in the state, equivalent to an annual death rate of 15.5 per 1,000. Infectious diseases caused 212 deaths, or 1.6 per cent. of the total mortality. Chief among the death causes were: Nervous diseases, 141; heart diseases, 126; consumption, 122; pneumonia, 99; accidents and violence, 88; diarrheal diseases, 84; diphtheria, 34; typhoid fever, 33; scarlet fever and cerebrospinal fever, each 7; malarial fever, 5, and whooping cough and measles, each 2.

ILLINOIS.

Fined for Failure to Make Report.—Dr. Frank C. J. Brooks, Rockford, charged by the health department with failing to report a case of diphtheria and thereby violating the health ordinance, is reported to have been fined $10 and costs, November 23.

Communicable Diseases.—The Lincoln school house, Bloomington, has been closed on account of diphtheria.——Scarlet fever is reported prevalent in Lacon and at Chillicothe.——The children's hospital connected with Cook County Hospital is closed on account of an epidemic of varicella.

District Association Meeting.—At the annual meeting of the North Central Illinois Medical Association held at Sterling, December 2, the following officers were elected: President, Dr. Edward S. Murphy, Dixon; vice-president, Dr. J. P. Plumb, Plainfield; secretary and treasurer, Dr. George A. Dicus, Streator, and censors, Drs. John C. White, Seatonville; William O. Ensign, Rutland; Joseph F. Dicus, Streator; Arthur H. Harms, Sterling.

Proposed Amendment to Medical Law.—A bill has been prepared by the State Board of Health, providing that the board may, in its discretion, admit to examination any student who has completed four annual sessions or terms as required by the rules of the board, in a medical college in good standing and who has passed the examination of said college. Those who pass may obtain temporary licenses good for eighteen months. On the completion of this period regular license may be issued if the applicant presents a diploma from the medical college in which he completed the session or term of the fourth year, and if he otherwise complies with the requirements of the board.

Personal.—Dr. and Mrs. Charles W. Heywood, Riverside, have returned from Europe.——Dr. S. W. Caldwell, Anna, has been appointed assistant superintendent of the Illinois Asylum for Feeble-minded Children, Lincoln, vice Dr. William Young, resigned.——Dr. August W. Meyer has been appointed physician for the poor at Quincy.——Dr. Joseph K. P. Hawks, Bloomington, has been appointed surgeon at the Soldiers Orphans' Home, Normal, vice Dr. Nelson K. McCormack, Normal, resigned.——Dr. J. F. Wen Glesky, staff physician at the Illinois Eastern Hospital for the Insane, Hospital, has passed the civil service examination and taken the position of assistant superintendent.

Health Clearing House.—At a meeting at which 20 health officers from Chicago and surrounding towns were present, held December 7, the Chicago Suburban Health League was organized as a permanent society to safeguard the health of Chicago and the surrounding territory. The territory of the league extends north to Kenosha, Wis.; west to Aurora and Elgin, and south to Whiting, Ind., and Chicago Heights. The following officers were elected: Dr. William R. Parkes, Evanston, president; Dr. Albert F. Storke, Oak Park, vice-president; Dr. Heman Spalding, Chicago, secretary-treasurer, and Drs. William A. Evans, Chicago; S. Gordon MacCracken, Winnetka; Aaron J. Lauer, Whiting, Ind.; Clarence W. Geyer, Aurora, and Albert F. Storke, Oak Park, executive committee.

Chicago.

Contagious Diseases.—The chief medical inspector reports that during the week ended December 7 there were reported 113 cases of diphtheria; 95 of scarlet fever; 45 of measles; 31 of tuberculosis; 29 of chickenpox; 18 of whooping cough, and 12 of typhoid. No case of smallpox was found during the week.

Fraud Orders Issued.—Postoffice Inspector Stuart has received notice from Washington that fraud orders have been issued by the postoffice department against the Boston Medical Institute, 152 Lake Street, and the Bellevue Medical Institute, 21 La Salle Street, charged with making false guarantees of cures.

Deaths of the Week.—The total deaths for the week ended December 7 were 546, 44 more than for the preceding week and 38 fewer than for the corresponding week of 1906, the respective annual death rates per 1,000 being 13.51, 12.42 and 14.86. Chief among death causes were: Tuberculosis, 77; pneumonia, 74; violence (including suicide), 56; heart diseases, 49; nephritis, 43; typhoid fever, 13; scarlet fever, 10; diphtheria, 8; influenza, 4, and measles and whooping cough, each one death.

Personal.—Dr. Groesbeck Walsh, who has been assistant physician of the Canal Zone, Panama, for two years, is spending his vacation at his home in Chicago.——Drs. William A. Fisher, Adolphus A. Wippern, H. W. Woodruff, Thomas Faith and John R. Hoffman were re-elected directors of the Chicago Eye, Ear, Nose and Throat College at the eleventh annual meeting of the stockholders, held December 1. A satisfactory condition of the institution was reported in all departments.——Dr. Nicholas Senn, who recently returned from South America seriously ill as the result of over work and exposure on the trip, is reported no better.

MARYLAND.

Sanatorium Opened.—The Patapsco Sanatorium, near Ellicott City, has been opened. Dr. James Bosley, health commissioner of Baltimore, is president, and Dr. W. Rushmer White is superintendent of the institution, which is designed for the treatment of nervous diseases, drug habit and mild mental diseases.

Typhoid Fever.—A local outbreak of typhoid fever is reported near Mount Pleasant, where about 10 cases have occurred.——Several cases of typhoid fever, with one death, are reported from Rising Sun.——Typhoid fever is prevalent in Chesapeake City, where a number of cases and several deaths have occurred.

McCormack in Maryland.—Dr. J. N. McCormack spoke at the Y. M. C. A. Auditorium, Cumberland, for the Allegheny and Garrett County medical societies, December 2. December 5 he spoke at Rockville, Montgomery County, and on the following day at Laurel, Howard County. December 7 he delivered an address in the senate chambers in the state house, Annapolis, and was entertained at dinner the same evening at the Maryland Club, Baltimore, by Dr. Hugh H. Young. December 8 he spoke at McCoy Hall, Johns Hopkins University, on "Medical Economics and Social Purity," and to this lecture the public and medical students especially were invited.

Society Meetings.—The Washington County Medical Society, at its recent annual meeting, elected the following officers: President, Dr. Augustus C. Maisch, Hagerstown; vice-president, Dr. Mary A. Laughlin, Hagerstown; secretary, Dr. Victor D. Miller, Jr., Hagerstown; censor, Dr. V. Milton Reichard, Fairplay; member of legislative committee, Dr. Charles D. Baker, Rohrersville, and health officers, Drs. Christian R. Sheller and William B. Morrison, both of Hagerstown. At a public meeting held in Hagerstown, December 3, Dr. J. N. McCormack delivered the address——At the annual meeting of the Frederick County Medical Society, November 15, the following officers were elected: President, Dr. Daniel E. Stone, Sr., Mount Pleasant; vice-presidents, Drs. Eutaw D. Neighbors, Lewistown, and Thomas C. Routson, Buckeystown; secretary, Dr. Ira J. McCurdy, Frederick; treasurer, Dr. Wilson A. Long, Frederick, and censor, Dr. C. P. Sappington, Frederick.

Baltimore.

Smallpox.—Dr. C. N. Athey, health warden of the twelfth district, has discovered 7 cases of smallpox in Highlandtown, a suburban town. The patients were all sent to quarantine.

Personal.—Dr. Lewis M. Allen was operated on for appendicitis at the University Hospital, November 29.——Dr. Thomas M. Wright has been appointed first assistant, and Dr. F. W. Hatchell, second assistant city bacteriologist.

MASSACHUSETTS.

Antituberculosis Society.—The organization of the Antituberculosis League of Lawrence has been completed. The officers are as follows: President, Dr. Charles G. Carleton; vice-president, Dr. George B. Sargent; general secretary, Dr. Carl H. Edam; medical supervisor, Dr. Alexander L. Siskind, and a medical council of sixty.

Bequests.—By the will of Marian T. Whitney of Saugus $3,000 each is left to the Boston Floating Hospital, the Boston Nursery for Blind Children, the New England Peabody Home for Crippled Children and the Boston Home for Incurables.——From the estate of Florence Lyman of Roxbury the Carney Hospital will receive $3,000; St. Mary's Infant Asylum, $25,000; the Massachusetts Eye and Ear Infirmary, $10,000, and the Home for Consumptives, $15,000, besides a large share each in a residuary estate of over $500,000.

New England Pediatricians to Organize.—The visiting staff of the Boston Floating Hospital (consisting of Drs. John Lovett Morse, chairman, William E. Fay, Arthur Willard Fairbanks, Charles W. Townsend and Henry I. Bowditch, secretary) request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8 The Fenway, Jan. 4, 1908, at 8:15 p. m. It is hoped that this movement will excite general interest, and that the attendance at the meeting will not be limited to those working along this special line.

Life Insurance Fees.—At the last quarterly meeting of the Essex North District Medical Society, held October 9, the secretary reported that a majority of members and many nonmembers residing in its jurisdiction had signified approval of the resolutions presented at the annual meeting in May, 1907, fixing $5 as a minimum fee for ordinary life insurance examinations. It was also voted that the secretary inform the members of the society and other physicians of the district that the society recommend the adoption of such a fee to date from Oct. 9, 1907.

MISSOURI.

Smallpox.—A smallpox quarantine hospital is to be established at Jefferson City. Inefficient quarantine is given as a reason for the prevalence of the disease in that place.——At Vandalia 11 cases of smallpox of mild type are reported.——Smallpox is said to exist in three families in St. Thomas.

Postgraduate School.—The Kansas Postgraduate School has been incorporated with the following officers: President, Dr. C. Lester Hall; vice-president, Dr. Herman E. Pearse; treasurer, Dr. Ellery M. Hetherington, and secretary, Dr. James L. Harrington. The school will occupy the old Medico-Chirurgical building.

Personal.—Dr. Morris C. Tuholsky has been placed in charge of the Municipal Tuberculosis Clinic at St. Louis.——Dr. J. E. Hunt, Kansas City, is said to have pleaded guilty to failure to report a case of a contagious disease, and to have been fined $10, the minimum amount.——Dr. Porter E. Williams, superintendent of State Hospital for the Insane, No. 1, Fulton, while hunting, shot himself in the leg.——Dr. James Stewart, St. Louis, has been appointed medical supervisor of the public schools.——Dr. William R. Gaddie, Duenweg, is under treatment at Pasteur Institute, Chicago, for hydrophobia.

NEW JERSEY.

Typhoid Fever.—Typhoid fever is prevalent in Burlington, where 23 cases have recently been reported to the Board of Health.——Mild cases of the disease are said to exist in almost every part of the Delaware Valley, owing to the pollution of the river water by sewage.

Vital Statistics.—During the month ended November 15, 2,902 deaths were reported to the Bureau of Vital Statistics, 661 of which were of infants under 1 year; 241 of children between 1 and 5 years of age, and 774 individuals of 60 years or over. Chief among the death causes were tuberculosis, 344; nervous diseases, 330; diseases of the circulatory system, 304; nephritis, 233; infantile diarrhea, 231; pneumonia, 169, and cancer, 128.

Personal.—Dr. Andrew F. McBride, mayor-elect of Paterson, sustained a fracture of the ankle, November 27.——Dr. William H. Hicks, first assistant physician and pathologist at the Essex County Hospital for the Insane, Newark, was tendered a reception and presented with a silver loving-cup, November 29. Dr. Hicks has been a member of the staff for fifteen years.——Dr. Philip Marvel, Atlantic City, has been taking a trip to the Pacific Coast.

NEW YORK.

Smallpox.—A conference of state local health officers was held in Watertown, November 20, to consider ways and means for the prevention of the spread of smallpox throughout northern and central New York.

Personal.—Dr. James W. Wherry, who resigned as medical superintendent of the Dansville Hospital, on account of ill health, has located at Santa Cruz, Cal.——Dr. Frank V. Brownell, Canajoharie, has been appointed almshouse physician and Dr. Alonzo B. Foster, Fonda, has been elected jail physician.——Dr. George A. Bellows, Waterloo, has been appointed jail physician.——Dr. George P. French, Rochester, was painfully burned, November 30, while making experiments in his laboratory.

New York City.

Entrance Standard Raised at Cornell.—Cornell University Medical School has raised its entrance requirements. The statement of the school is given in full in the department of Medical Education, this issue.

Hospitals to Have Quiet.—The ordinance passed last summer providing for quiet zones for hospitals is to be put into effect. Notices will be posted in all streets near or leading to hospitals requesting quiet. The ordinance forbids driving at a speed faster than a walk and violators are subject to a fine of $10 or imprisonment for four days. An order has been issued by the street railways, telling motormen not to run fast past hospitals and not to ring the bell oftener than is necessary.

Central Ambulance System.—The Municipal Hospital Commission, appointed recently, met a delegation of superintendents and physicians from the various hospitals of New York, for the purpose of inquiring into the needs of the public and semi-public hospitals of the city. A plan for a new ambulance service was submitted, which calls for a central ambulance station corresponding to the fire headquarters, to which all ambulance calls should come and through which they should be assigned to the various hospitals. All the representatives of the city hospitals and private organizations were in favor of this plan. The question of amplifying Bellevue and other large hospitals to meet the needs of the growing population was discussed, and it was the opinion that a system of smaller emergency hospitals in the more congested parts of the city would better answer the pressing needs of the present than increasing the size of Bellevue.

NORTH CAROLINA.

Prohibition in Asheville.—Asheville recently voted to prohibit the sale of alcoholic liquors in the city after Jan. 1, 1908. Druggists will pay an annual license of $100, after that date, to fill physicians' prescriptions for alcoholic liquors to be used only as a medicine.

Hospital Notes.—The Billingsley Hospital, Statesville, will be ready to receive patients, January 1. The wards will be open to all members of the regular profession. Twenty additional rooms are being added to Whitehead-Stokes Surgical Sanatorium, Salisbury.——The Lumberton Hospital was recently opened to receive patients. Dr. T. H. Thompson is surgeon-in-charge.

Personal.—Dr. James A. Burroughs, Asheville, entertained 70 members of the Buncombe County Medical Society at dinner, November 25.——Dr. Henry H. Briggs, Asheville, has been appointed consulting ophthalmologist to the Southern Railway Company.——Dr. R. Vance Brawley, Salisbury, has returned from Bermuda.——Dr. Frank M. Winchester, Charlotte, has been elected alderman.

OHIO.

Tuberculosis Dispensary Open.—A tuberculosis dispensary, established to aid tuberculous patients and to inaugurate a campaign of education for the prevention of tuberculosis, was recently opened in Toledo. Dr. Ralph P. Daniels is in charge of the dispensary.

Cincinnati Board of Health.—The Cincinnati Academy of Medicine passed a resolution, November 25, requesting the city council to take the power of a board of health from the Board of Public Service, and to place it in the hands of a board of health consisting of five members appointed by the mayor.

District Society Meeting.—The fourth annual meeting of the Eighth District Medical Society was held at Newark, December 5, under the auspices of the Licking County Medical Society. Dr. Jerry M. Hyde, Nelsonville, was elected president, and Dr. William E. Wright, Newark, secretary.

Convicted of Arson.—Dr. A. D. Spence, formerly of South Lebanon, was indicted on the charge of having set fire to his

house a year ago. He was captured in Denver, and is said to have pleaded guilty and to have been sentenced to two years' imprisonment in the state penitentiary, December 2.

In the Hands of the Law.—Dr. Edward Pfeiffer, Columbus, charged with the illegal practice of medicine, is said to have been found guilty by a jury in the police court on November 22 and fined $200 and costs. A motion for a new trial was overruled.——Ed. Dunn, Toledo, charged with practicing medicine without a license, is said to have been found guilty at Toledo November 30 and fined $20 and costs. The fine was suspended on the defendant's promise of amendment.——The State of Ohio has filed a motion for a new trial in the case of C. C. Marsh, a "neuro-magnetic" healer, who was acquitted November 18, on the charge of practicing medicine without a license.

Ill and Injured.—Dr. Henry C. Rutter, Columbus, fell a few days ago while trying to catch a street car and seriously injured his arm.——Dr. Jesse A. Van Fossen, Columbus, who was operated on recently for appendicitis, is reported to be improving.——Dr. Frank C. Larimore, Mt. Vernon, recently underwent operation at Mt. Vernon Hospital for cholelithiasis. ——Dr. William Shira, Larue, in a circular-saw accident, November 16, lost the middle and ring finger of his right hand. ——Dr. Aloysius P. Renneker, Cincinnati, was thrown from his buggy recently, and suffered a concussion of the brain and several severe scalp wounds.——Dr. John I. Davis, Shawnee, recently underwent operation for appendicitis.——Dr. Seth W. Fuller is reported to be very ill at his home in Bellefontaine.

Personal.—Dr. John D. Dunham, Columbus, has returned from Europe.——Dr. Abraham H. Gorrell, elected mayor of Zanesville, has resigned as coroner of Muskingum County.——Dr. Webster S. Smith has been elected a visiting member of the staff of Miami Hospital, Dayton, and Dr. William A. Ewing and George P. Dale have been appointed obstetricians to the institution.——Dr. J. H. Metzger, Toledo, has sailed for Europe. ——The following appointments have been made on the staff of the Cincinnati Hospital: Dr. Robert W. Thomas, pathologist; Dr. David I. Wolfstein, neurologist; Drs. Meyer L. Heidingsfeld and Arthur J. Markley, dermatologists; and Dr. W. H. Lewis, assistant in the laboratory.——Dr. Henry F. Kattenhorn, Cincinnati, left November 28 for a six months' trip to South America, the Pacific Islands and India.

OKLAHOMA.

Hospital Note.—The Muskogee Hospital Association has leased the boys' dormitory of Kendall College and removed the infirmary there from its present location on South Main Street.

Charter Revoked.—Judge John H. Burford has signed a stipulation presented by Assistant Attorney General Cline, annulling and canceling a charter granted four years ago to the Twentieth Century Physio-Medical College, on the ground that the college was a diploma mill.

Loses License.—George W. McGuire, practicing as Dr. G. W. McGuire, Checotah, is said to have been expelled from the Indian Territory Medical Society and to have had his license to practice revoked by the state board, on the ground that his diploma was obtained by fraud.

State Board Election.—The State Board of Health organized November 23 and elected the following officers: President, Dr. William T. Tilly, Muskogee; vice-president, Dr. Albert E. Davenport, Tishomingo, and secretary, Dr. John C. Mahr, Shawnee. ——The following county superintendents of health were appointed: Lincoln County, Dr. Frank H. Norwood, Prague; Mayes County, Dr. George W. Tilly, Pryor Creek; Craig County, Dr. Albert M. Clinkscales, Vinita; McIntosh County, Dr. Bascom J. Vance, Checotah; Marshall County, Dr. Thomas A. Blaylock, Madill; Pawnee County, Dr. James Q. Newell, Jennings; Paine County, Dr. James B. Murphy, Stillwater, and Kiowa County, Dr. William L. York, Hobart.

PENNSYLVANIA.

Diphtheria Closes School.—On account of the prevalence of diphtheria among the pupils of the public schools at Bryn Mawr, the institution has been closed.

Hospital Site Approved.—Governor Stuart has approved the site of the new $30,000 State Hospital for injured miners, which is to be located close to Uniontown.

Debarred from Practice.—William J. Byrne, Pittsburg, will, it is said, be permanently debarred from practice of medicine in the state, it being declared that he made an attempt to bribe a member of the State Medical Examining Board in order to obtain the list of the examination questions.

Philadelphia.

Hospital Donations.—At an entertainment given for the benefit of the Garrettson Hospital, November 19, $700 was realized.——At the regular donation day at the German Hospital, it is stated that $8,000 was obtained in money, and the donations of groceries amounted to $750.

Fire in Hospital.—Spontaneous combustion of chemicals is supposed to have caused a fire in the laboratory and pharmacy of the Medico-Chirurgical College, November 23. The conflagration caused damages to the extent of $1,500. The main portion of the hospital, however, was not damaged.

Alumni Association Organized.—At a recent meeting of the resident and ex-resident physicians of Mount Sinai Hospital an alumni association was formed, and the following officers were elected: President, Dr. George Rosenbaugh; vice-president, Dr. D. M. Toll, and secretary and treasurer, Dr. M. B. Cooperman.

Health Report.—The total number of deaths reported for the week ended December 8 was 475. This is an increase of 34 over those of last week and a decrease of 41 from the number reported in the corresponding week of 1906. The principal causes of death were: Typhoid fever, 8; scarlet fever, 5; diphtheria, 13; cerebrospinal meningitis, 3; consumption, 62; cancer, 26; diabetes, 4; apoplexy, 23; heart disease, 41; acute respiratory diseases, 48; enteritis, 13; nephritis, 46; congenital debility, 13; senility, 8; suicide, 5; accidents, 10, and marasmus, 4. There were 191 cases of contagious disease reported, with 26 deaths, as compared with 218 cases and 16 deaths reported in the preceding week.

Society Elections.—At the regular meeting of the Aid Association of the Philadelphia County Medical Society, the following officers were chosen for the ensuing year: President, Dr. George Woodward; vice-president, Dr. James B. Walker; treasurer, Dr. John B. Turner; secretary, Dr. Lewis H. Adler, Jr., and directors, Drs. Oscar H. Allis, John C. DaCosta, William M. Sweet, Roland G. Curtin, Samuel W. Morton, Alexander R. Craig, John B. Roberts, DeForest Willard and John B. Turner. ——The Philadelphia Society of Normal and Pathological Physiology has elected the following officers: President, Dr. Horatio C. Wood, Jr.; vice-president, Dr. Nathaniel Gildersleeve, and secretary, Dr. William H. F. Addison.

Tuberculosis Crusade.—Plans for a centrally located tuberculosis dispensary have been completed by Dr. Joseph S. Neff, director of the Department of Health and Charities, and councils will be asked to appropriate more than $16,000 for the establishment of an institution of this character in the central section of the city. It is the intention to establish an outdoor dispensary, and this will be provided with a druggist, a clerk and two nurses. Provision for the dispensing of milk, eggs and necessary drugs will be made, and it will be also the duty of the attendants to instruct patients how to care for themselves; and, furthermore, the nurses of the institution will be in attendance on the patients at their homes. Work is to be conducted along the lines followed by the Phipps Institute. It is probable that if a central dispensary is established, district or branch dispensaries will be placed throughout the city.

WISCONSIN.

Fire in Hospital.—A fire in Columbia County Insane Hospital, Wyocena, caused slight damage, but considerable alarm to the inmates, who were quieted without casualty.

Banquet for Dr. Gordon.—A banquet was given at the Athern Hotel, Oshkosh, November 11, in honor of Dr. William A. Gordon, superintendent of the Northern Hospital for the Insane, at which about 50 were in attendance.

Communicable Diseases.—Smallpox is reported epidemic at Galesville.——A few cases are reported from Chippewa and Eagle Point——The number of cases of smallpox at Fond du Lac is said to be rapidly diminishing.——Typhoid fever is reported epidemic in Stoughton.——Diphtheria is reported prevalent in Manitowoc.

Tuberculosis Sanatorium.—The new sanatorium built by the state of Wisconsin for the treatment of tuberculosis, was formally opened at Wales, Waukesha County, November 5. The state has already expended $125,000 on the institution, and has made provision for an annual maintenance fund of $25,000. The sanatorium buildings consist of an administration hall, dining hall, laundry, cold storage and power plants and superintendent's residence, all constructed of concrete, and eight frame structures, each accommodating fifteen patients.

District Society Meetings.—At the annual meeting of the Medical Society of the Seventh Councilor District of Wisconsin, held in La Crosse, November 7, Dr. Henry A. Jegi, Gales-

ville, was elected president; Dr. Eugene H. Townsend, New Lisbon, vice-president, and Dr. Edward N. Reed, La Crosse, secretary and treasurer.——At the annual meeting of the Tenth Councilor District Medical Society, held at Eau Claire, November 24, Dr. Edward S. Hayes, Eau Claire, was re-elected president, and Dr. Eugene L. Boothbey, Hammond, secretary.

Personal.—Dr. Joseph L. Hutchinson, Peshtigo, has moved to Seattle, Wash.——Dr. Richard S. O'Connell, Cato, is seriously ill with cerebral hemorrhage.——Dr. Daniel R. Connell, Beloit, sailed for Europe November 16.——Dr. Ferdinand M. Schulz, former health commissioner of Milwaukee, has been chosen as superintendent of the Milwaukee County Hospital, Wauwatosa, succeeding Dr. John W. Coon.——Dr. William F. Beuttler, Wauwatosa, has been re-elected superintendent of the Milwaukee County Asylum for the Chronic Insane.——Dr. Thomas F. Shinnick, Watertown, has been elected president; Dr. Fred A. Eichelberg, Reeseville, vice-president, and Dr. Charles J. Habhegger, Watertown, secretary and treasurer of St. Mary's Hospital and Watertown Training School for Nurses.

GENERAL.

Cholera at Manila.—During the week ended October 19, 23 cases of cholera were reported and 21 deaths.

Healer Allowed to Minister to Lepers.—On November 20 the Honolulu Board of Health is said to have decided to permit J. Lor Wallach, who claims that he can cure leprosy, to treat the lepers at the Molokai settlement.

Plague Infection.—During the week ended November 9, 130 rats were examined bacteriologically at the Plague Laboratory of the Public Health and Marine-Hospital Service, Honolulu. Plague infection was found in one rat sent from Hilo.

Personal.—Dr. John R. McDill, Manila, has returned from a vacation trip around the world.——Dr. E. M. Johnson, City of Mexico, has left for Guadalajara, where he expects to locate. ——The authorities have decided that the accusation of attempted assault by Miss Bermudez against Dr. Arthur Palmer, City of Mexico, is calumny and the charge is declared unfounded.

Interurban Society Election.—At the annual meeting of the Interurban Academy of Medicine, an organization of physicians of Duluth, Minn., and Superior, Wis., held November 20, Dr. Herbert J. Orchard, Superior, was elected president; Dr. Edward L. Touhy, Duluth, vice-president; Dr. Thomas J. O'Leary, Superior, secretary and treasurer, and Dr. John B. Weston, Duluth, censor.

Ohio Valley Meeting.—At the ninth annual meeting of the Ohio Valley Medical Association, held in Evansville, November 13 and 14, the following officers were elected: President, Dr. J. Leaming Wiggins, East St. Louis, Ill.; vice-presidents, Drs. Curran Pope, Louisville; Albert E. Sterne, Indianapolis, and J. Frank Lydston, Chicago, and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville, Ind. The association decided to meet in 1908 at French Lick Springs, Ind.

Tri-State Society Meeting.—The Tri-State Medical Society of Texas, Louisiana and Arkansas held its annual convention at Shreveport, La., November 13 and 14. Texarkana was selected as the place for the 1908 meeting and the following officers were elected: President, Dr. Charles A. Smith, Texarkana, Texas; vice-presidents, Drs. George H. Moody, San Antonio, Texas; Robert H. Blackman, Ruston, La.; Arthur U. Williams, Hot Springs, Ark., and secretary, Dr. Robert H. T. Mann, Texarkana, Ark.

Yellow Fever in Cuba.—The two cases of suspected yellow fever reported by the commanding officer at Santa Clara have been confirmed as yellow fever. One death from yellow fever is reported at Alacranes, November 17, and a new case developed November 22. On November 21 a death occurred at Santa Clara and one death on November 17 at Ciego de Avila in the American camp. At the close of the week there were 4 deaths at Cienfuegos, 2 in Santa Clara and one each in Alacranes, Havana and Ciego de Avila.

Railway Surgeons Meet.—At the annual meeting of the Wabash Railway Surgical Association, held in St. Louis, November 17, Dr. Walter M. Pritchett, Glasgow, Mo., was elected president; Dr. Walter H. Snyder, Toledo, Ohio, vice-president, and Dr. Charles B. Stemen, Kansas City, Kan., secretary and treasurer (re-elected for the twenty-sixth term).——The Chicago, Burlington & Quincy Association of Railway Surgeons was organized recently at Denver with the following officers: President, Dr. Theodore P. Livingston, Plattsmouth, Neb.; vice-president, Dr. Byron B. Davis, Omaha, secretary, Dr. George F. Roehrig, Denver, and treasurer, Dr. H. Savage, Sioux City, Iowa

Report of the Surgeon General of the Navy.—In the annual report of the chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, he states that great difficulty is experienced in recruiting the medical corps to its normal strength. The conditions which tend to bring about this difficulty are a disproportion of the grades, a sluggish promotion and deprivation of titles. Although 74 permits were granted to candidates, only 43 appeared for examination. The surgeon general advises an increase in the personnel of the Naval Hospital Corps and an increase in the pay of the members of that corps. He also urges the employment of women nurses as a part of the medical department of the United States Navy, to be eligible for service at the naval hospitals, on hospital ships and for such duty as the surgeon general may deem necessary. He comments at length on tuberculosis in the Navy and the means for its prevention, and gives a detailed description of the United States Naval Hospital for Tuberculosis, New Fort Lyon, Cal.

National Legislative Conference.—The Conference of the Committee on Medical Legislation and of the Council on Medical Legislation opened December 10, at Chicago, eighteen states being represented. The chairman, Dr. Charles A. L. Reed of Cincinnati, in his address, reviewed the subjects before the conference, recommended the endorsement of the bill for the reorganization of the medical department of the United States Army, as well as the approval of the four bills drafted by Surgeon-General Rixey of the United States Navy, for a reorganization of the medical corps; advised uniform legislation regulating medical practice in all states and the assembling of a council of states to plan therefor, and reviewed the work of the Committee of One Hundred for the establishment of a national department of public health. The secretary reviewed the work of the Bureau of Medical Legislation for the past six months, and the plans for the coming year, emphasizing the desire on the part of the Bureau and of the Committee for the closest cooperation between these bodies and the various state boards of health and medical examining boards, looking toward the suppression of quackery and imposture and the better regulation of medical practice. The desirability of uniform legislation and the necessity of careful and exhaustive study of fundamental questions connected therewith were also discussed. The report of the reference committee on naval medical reorganization bills was made by Dr. B. R. McClellan of Ohio. Dr. Plummer of the United States Navy spoke in favor of the bills, which were approved by the conference. They provide for a reorganization of the medical corps of the Navy, for the appointment of dental surgeons, and for the organization of a corps of women nurses for naval hospitals and for hospital ships in time of war. The bill providing a pension for the widows of Dr. James Carroll and Dr. Jesse W. Lazear was endorsed. The conference then adjourned until Wednesday morning. Full reports of the conference will appear later.

FOREIGN.

Bust of Widerhofer Unveiled.—The pupils of the late professor of pediatrics at Vienna, Hermann von Widerhofer, have presented the university with his bust which was unveiled with much ceremony, November 20, with addresses commemorating his forty years of teaching. He died in 1901, at the age of 69.

The Antiquackery Campaign in Germany.—A committee has been appointed by the medical chambers to collect material in regard to quack practices, ads, and everything pertaining to nostrums and their exploitation. All the members of the medical chambers are urged to collect all material of the kind accumulating in their respective districts and to forward same before March 1, 1908, to the headquarters of the committee, Leipsic Geschäftsstelle des Deutschen Aerztevereinsbund, Seeburg 49, Leipsic, Germany. It is proposed to sift and arrange the material thus collected and lay it before the legislative and administrative authorities.

Medical Paper Sued for Alleged Slander.—The *Münchener medizinische Wochenschrift* referred, February 26, to a certain Dr. H. Fischer of Berlin as presenting a tragic example of the gradual degradation of a talented medical man, who had gone downward step by step until he presented the pitiable spectacle of hireling to a well-known quack. At one time Fischer was a collaborator on the *Wochenschrift*, but all connection with it long since ceased. He was said to have since been a writer of medical write-ups and to have been denounced on specific charges by the Medical Tribunal of Honor. He has recently written a caustic arraignment of the medical profession in a book entitled, "Aerztliches, Allzuaerztliches," and also in a play which has been staged; it portrays physicians as

capable of inhuman vivisection and other practices. He brought suit for damages against the Munich weekly, which would retract none of its words, but presented evidence to prove the correctness of the picture of the plaintiff which it had drawn. The judge admitted this testimony, but considered that the expression "pitiable hireling"—*jämmerlicher Untergebener*—had such contemptuous intent that the plaintiff was entitled to damages, which he assessed at $25, with costs. Fischer has recently been fined $75 or twenty days' imprisonment as a penalty for contemptuous remarks about the Medical Tribunal of Honor. The Munich weekly appealed at once to a higher court. Fischer has been sentenced five times by the Medical Tribunal of Honor for the Berlin district, fines ranging from 50 to 300 marks having been imposed, and the last time a penalty of 500 marks ($125). The decisions and the reasons therefor were published by the tribunal in three Berlin lay papers, including the *Lokalanzeiger*, and were read at the trial by the defendant. To this Fischer replied that he had not paid any attention to the proceedings of the Tribunal of Honor for years and returned unopened any communications received from it. The tribunal had no means to compel his attendance, or attention or payment of the fines, and he regarded the tribunal as an illegal institution. His lawyer quoted a legislator to the effect that the tribunal was not useful, but rather was doing harm. The defendant offered as further testimony letters written by Fischer to manufacturing chemists offering to write up their products. One letter stated that he would write up the product and let them have the article that same week. He asked whether and in which journals the manufacturers were advertising, adding: "It would be easier to get the article published in such journals. In case you do not advertise, would you leave the choice to me?" He continued: "In addition I wish to inform you that I have often done literary work of the kind until the last two years, and that extensive articles, requiring considerable preliminary work and time, would bring me in at least 150 marks ($37.50). . . . In consideration of this I propose that you pay me $25 for my time and send me 30 bottles of your valued preparation." Fischer's lawyer told that his client had been until quite recently a contributor to some of the most highly esteemed medical journals, the *Therapeutische Monatshefte*, the *Aerztliche Rundschau* and the *Allg. med. Cent.-Ztg.* He admitted that his client had accepted payment from manufacturing chemists for articles reporting trials of new remedies to remunerate him for the great outlay of time, adding: "This is the general practice among the members of the medical profession." The defendant protested against this assertion, saying further, "as there are some physicians who make a business of recommending new remedies for pay, so there are also journals which make a business of accepting such articles. The plaintiff will no longer be able to publish his articles in the *Therapeutische Monatshefte*, at least. The editor of that journal stated at the last meeting of the Association of the Medical Press that he regretted the publication of Fischer's latest articles, and that the character of the writer was not known to him at the time the articles were accepted." The defendant has appealed the case to a higher court. He states in his report of the proceedings, published in his journal, November 12, that one of the principal reasons for the appeal is to sustain the honor of the Prussian Tribunal of Honor: "If, as the plaintiff's lawyer declared, there are many physicians who mock at the Tribunal of Honor, and if, as in the present case, a Bavarian court pays no attention to its decisions as proving the degradation of a member of the profession repeatedly sentenced by the tribunal, it is time the institution was abolished." Fischer's name was one of the first on the black list of medical writers recently compiled by German medical editors as previously mentioned in these columns.

LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, Nov. 27, 1907.

Health of the German Emperor.

Surgeon-General Ilberg, Kaiser Wilhelm's physician states concerning the Kaiser's health that there is not the slightest residuum of the old trouble in the larynx and that, "not only in this respect, but in all others, the emperor is in perfect health and in the best of spirits. There has never been any question of operation, nor has there been any consultation with British physicians. The simple facts are that the emperor has been troubled with an ordinary autumn cold, of which he is now completely free." No doubt the above report was published to contradict the many statements of the British yellow press that the emperor was suffering from a chronic laryngeal affection. It was more than hinted that the affection was of a malignant nature.

The Careless Compounding of Medicines.

Dr. F. L. Teed, the city analyst, has made a serious report concerning the compounding of prescriptions. He finds that the highest percentage of "adulterated" samples was in drugs bought with prescriptions. Out of seven prescriptions purchased six were not made up in accordance with the demand of the purchaser—a percentage of error amounting to 85. Dr. Teed concludes, therefore, that a very large percentage of the prescriptions dispensed in cases of illness, when lives are trembling in the balance, are wrong. He makes the striking comment: "A large number of people, even in the medical profession, are of opinion that drugs are of little use, but from my recent experience I should doubt if ever they have been tried." Dr. Collingridge, health officer of the city, says that the mistakes are not wilful, but arise from carelessness. He condemns the present practice of assuming that bottles have the capacity claimed for them. The correct quantity of a drug is measured or weighed, but water is simply added in amount sufficient to fill the bottle. A reputed six-ounce bottle was found to contain as much as five and a half drams in excess, equal to 11 per cent. Thus, if the dose was measured, the quantity of the drug taken would be diminished to that extent. It was clear that there was no intention to defraud the public on the part of the chemists, so no proceedings were taken, but a circular has been issued calling attention to this form of carelessness.

Union of Sanitary Authorities.

A preliminary conference of representatives of sanitary committees of county and borough councils and port sanitary authorities of England and Wales was held in Caxton Hall, Westminster, to consider the establishment of a permanent union to secure uniformity of action in public health administration. Mr. H. W. Newton, chairman of the sanitary committee of the Newcastle corporation (in which city the movement originated), presided. A resolution was carried approving "of the establishment of a union of the sanitary authorities of England and Wales for the purpose of promoting the public health interests of the nation; and that the said union shall have for its immediate objects : (a) To secure as far as may be practicable harmony of interest and uniformity of action among sanitary authorities in general on matters relating to public health; (b) to stimulate and concentrate effort for the purpose of effecting necessary sanitary reforms, whether for the public weal or the benefit of individual sanitary authorities' districts; (c) to encourage and promote the study of practical hygiene and to educate opinion with respect to the national as well as the local importance of public health; (d) to consider the conditions and circumstances, general or local, whereby disease is liable to be caused to man and as far as possible, to cause their removal.

The Evils of London Smoke.

The evils of the acrid London fogs which turn day into night, send up the death rate of the metropolis enormously, destroy vegetation, and help to corrode (by reason of the sulphuric acid present) our public buildings and statues, have long been a subject of concern to sanitarians. In recent years the evil has been mitigating in consequence of the substitution of gas for coal fires, but there is still considerable room for improvement. At the Institute of Hygiene, Sir William Richmond, president of the Smoke Abatement Society took the chair at a meeting held to discuss the subject "London Smoke and its Effects on Health." The following resolution was carried: That the coal smoke in the atmosphere is injurious to health and lowering to vitality, and that every possible means should be adopted to find a remedy. Dr. Ascher, a German doctor, who made a very close study of this subject, found that disease and mortality are greater nearer to factories and places where there is much smoke, and he proved beyond a doubt that human vitality is much less when living under the influence of smoke. Smoke produces many troubles, including indigestion and catarrh of the stomach, and its worst effect is when smoke was in combination with fog. The indirect effect on health is, however, even greater than its direct effects.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

VIENNA, Nov. 25, 1907.

Nearly Two Millions for Hospital Equipments.

A sum of $1,600,000 (8,000,000 Austrian crowns) has been put aside by the minister of finance from his enormous surplus of $28,000,000 for the purpose of enabling the different clinics and wards to get the very latest modern outfit. This sum does not include any expenditure for the new general

hospital in Vienna, nor any building subsidy, but only investments in apparatus, or for the convenience of patients, and will be expended only in the hospitals belonging to the universities in Austria.

An Emergency Hospital.

The fourth surgical department of the Vienna general hospital will be converted shortly into an "accident hospital," which will accommodate about 100 emergency cases. The "street ambulance" corps, which has nearly the monopoly in taking charge of all accidents of a surgical and medical nature generally, will thus be relieved of the task of taking its living burden to one hospital after the other without being able to obtain a bed for its patient, as has happened occasionally in the past. The cost of the transformation is not large and the urgent necessity for such an accident ward is made obvious by the figures. Not less than 2,000 surgical accidents have to be dealt with yearly in the city alone, while the number of "calls" for 1906 was upwards of 10,000. If it should prove possible to get a proper accident clinic with a thorough clinical teacher at the head of it, the advantage would go both ways: to the patients and to the profession. The medical students at present rarely have a chance to study emergency cases from the start.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Prevention of Colds.

To prevent colds we must know the causes, and these are:

1. Unsuitable clothing.
2. Dust.
3. Too dry atmosphere in houses.
4. Impure air, crowd poisoning.
5. Infection, polluted air.
6. Obstruction of the upper air passages (mouth breathing).
7. Family or individual tendency to colds.

First.—The subject of proper clothing for children and adults for the different seasons and different climates is an ever recurring one for discussion. It is obvious that there can be no dogma that shall declare that any one kind of clothing next the skin or any one kind of outer clothing is a *sine qua non* for all individuals even in any one climate. The physician should give more attention to this subject, and should individualize his patients in advising how they shall be clothed, especially children.

It is absurd to state that a child or adult subjected to rapid changes of climate and surrounded by a high percentage of outdoor moisture should be clothed the same as those who live in an unchangeable climate, either cold or warm. Also, in any given climate it is as absurd to decide that a man who lives in a warm house, evenly heated in all parts, walks or goes in a closed vehicle to his office to be again in a warm atmosphere, should be clothed the same as the man who lives in a house that is only heated in spots, and has to work in more or less exposed places or actually out of doors.

There is no question that a large proportion of mankind is dressed too warmly, that children are overburdened with clothing, at least in parts, while other parts may be absurdly exposed. It is also interesting to note that girls and women have little or nothing over the upper part of their chests, back, shoulders and neck, while boys and men have several layers of thick clothing in these regions, and the former are no more likely to have colds than the latter; unquestionably a species of education of the capillaries of the skin to withstand the cold in one instance and to be susceptible to it in the other.

The individual patient should be studied to decide whether he or she should be advised to wear linen, linen mesh, silk or thin woolen garments next the skin in cold weather, unless from childhood he has been educated to wear very thin underclothing. Patients who perspire freely should generally not be clothed in woolen. On the other hand, patients who have a tendency to diarrhea or disturbed kidney action or to dry, unhealthy skins had better be clothed in thin wool.

It should also be remembered, as the London *Lancet*, Oct. 12, 1907, in an editorial, well says, that it is a mistake to think that a heavy garment is necessarily a warm one; consequently many men especially wear heavy outer clothing and heavy overcoats when thinner but more tightly woven goods would keep them much warmer and without the overweighting. The *Lancet* also states that we should not necessarily select dark goods for winter wear, and states that light-colored material does not so easily give up its heat as do dark materials, and instances the color of the fur of the polar bear.

Second.—The importance of dust as an element in the production of colds is shown by their greater frequency in cities than in the country and during seasons of the year when the streets are not watered, as in midwinter when there is no snow, and early in the spring or late in the fall. Dust can cause colds by irritation from its particles, or it may carry infection. This is especially noticeable during the winter seasons, when the doors and windows are more or less tightly closed where large numbers of people assemble, especially in theaters and in concert and lecture halls where noisy applause is given with the feet. The dust and disease germs rise from the floor and cause an epidemic of colds, tonsillitis or la grippe.

Third.—Besides keeping the houses of the northern portions of our country too hot, the air is also nowadays too dry. This is due to heated air, or to hot water heating, or to steam heat, where steam is not allowed to escape. As well discussed by Dr. Albert Bardes of New York in the *Dietetic and Hygienic Gazette* for October, 1907, a dry atmosphere causes congestion of the mucous membrane of the nostrils and allows the particles of dust in the atmosphere more quickly and severely to irritate the mucous membranes than if there is moisture in the air. Hence the windows of houses should be kept freely open both night and day, and there should be some means of preventing the air in houses from becoming too dry.

Fourth.—Whenever a number of people are in a room together, and, especially, if one of them has a cold, with sneezing and coughing (and consequently spraying of the atmosphere, unless proper care with the handkerchief is taken), there should be a free circulation of fresh air.

Fifth.—It is an axiom that may be accepted without discussion that most colds carry contagion and can be given from patient to patient in the same household or business apartment, especially to those who are susceptible to nose and throat colds. It is also noteworthy that when a cold goes through a family, as we often see it, the type of that cold or the peculiarities of that individual infection is often similar in the individual cases, showing that it is due to a distinct germ. There are probably a large number of germs of the streptococcus variety, perhaps, or possibly allied to the influenza germ, causing the slight peculiarities and differences in the different epidemics. We have colds that are simple colds, and colds that are like influenza, and acute infections that give the aches and pains even of a beginning cerebrospinal meningitis, showing that in all probability the more typical types of germs have

more or less distant cousins that can cause symptoms and infection in man. Hence every cold should be treated as though it were liable to infect others, and good, sensible care will prevent other members of the family from getting the same infection.

Sixth.—The necessity for the nose and nasopharynx to be free from obstruction is too well understood and acknowledged to require discussion. It is more important to-day for a child's future welfare to know that it breathes properly through its nostrils than any other single detail in its early management and care. If inspired air can not go properly into the lungs by the way of the nostrils the germs that are in the atmosphere are not caught on mucous membrane that is ready to care for them, infection readily takes place by the way of the tonsils or the pharynx, impure air thus reaches the bronchial tubes, and bronchitis is readily caused. The tonsils, so ever ready for infection, become congested, then chronically enlarged, then allow infection to go through them and reach the lower glands, perhaps the bronchial glands, and we have the beginning of a future tuberculosis, to say nothing of the ever recurrent throat disturbances and inflammations. With obstructed nostrils, if a cold begins, there is more liability to frontal sinusitis, trouble in the antrums, and even perhaps an ethmoiditis. Also a little mucus or mucopus in the nasopharynx with the already hypersecretion of adenoid tissue so readily obstructs an Eustachian tube that the ever ready complication of an inflamed middle ear occurs.

There can then be no discussion of the truth that every human being should breathe through the nostrils, and constant colds and future miserableness with actual defects will be prevented.

Seventh.—It is perfectly true that certain families tend to have colds and tend to cough, as other families tend to be gouty, etc. In such families the children or the individual so susceptible should have the nose and throat thoroughly examined to see if there is any local reason for this tendency. Everything possible having been done to make the air passages healthy and normal, the clothing, the tendency to perspire, the tendency to be cold, especially to have cold hands and feet, the kind of atmosphere in which the patient lives and sleeps, and even the kind of food taken should all be carefully investigated. The right clothing for a given individual, thoroughly adapted to his constitution and his mode of life, should be selected. Cold-water sponging or showers, depending on the reaction of the individual, with brisk rubbing, should be used every morning to teach the vasomotor centers and the peripheral circulation to react quickly to changes in temperature. Massage, physical exercise, the relief of constipation, and the avoidance of such articles of food and drink as tend to debilitate the circulation or to impair the digestion are all indicated. The condition of the skin will often show that nutrition somewhere is not right, and the finding of that fault and correcting it will prevent colds.

The deliberate exposure of children and people to too severe colds or draughts with incomplete and improper clothing, much different than that to which they have been accustomed, is not good hygienic sense. This hardening process has caused dangerous sickness and dangerous debility of adults, and has been the cause of many deaths among young children. Good sense should be used, and with the gradual education of the system and skin to withstand or to avoid chilling and change in temperature, the individual will find that he has fewer colds. It can not be too strongly emphasized that radical changes in methods of life, however necessary they may be ultimately, generally should not be made suddenly.

Chronic Pharyngitis.

Dr. R. M. Niles, Scranton, Pa., in the *Medical Record*, Oct. 5, 1907, says that simple chronic pharyngitis will generally readily yield to treatment if the nasal passages are normal.

The necessity for breathing through the nose and not through the mouth can not be too much emphasized, and it is almost impossible to keep the throat in healthy condition in a mouth-breather.

Excessive use of tobacco, especially cigarettes with inhalation of the smoke is, of course, an etiologic factor that must be removed. All errors in hygiene should be corrected, and especially should fresh, clean air be inhaled at night. Any constipation or indigestion should be corrected, if possible, and alcohol should be stopped if much is taken.

Niles often finds the red and yellow iodids of mercury beneficial in curing chronic pharyngitis, even if there is no specific history, as:

℞.

Tabletas hydrargyri iodidi rubri āā gr. 1/16.

No. 50.

Sig.: A tablet, three times a day, after meals.

Or:

℞.

Tabletas hydrargyri iodidi flavi āā gr. ¼.

No. 50.

Sig.: A tablet, three times a day, after meals.

[Patients, especially non-syphilitics, must be carefully watched while taking mercury lest symptoms of mercurialization occur.]

Niles' local treatment is as follows:

℞.	gm. or c.c.		
Potassii bicarbonatis	30		ʒvi
Spiritus menthæ piperitæ	3		
Spiritus camphoræ	3	or	āā m. xl
Aquæ, ad	200		ad fl℥vi

M. et sig.: Use as a gargle; best warmed.

[If this solution seems too strong, it may be diluted with an equal part of hot water.]

Niles says: "The specific gravity of watery solutions used in the nose should be approximately 1.020. Aqueous solutions may be lowered in specific gravity by adding water or raised by the addition of glycerin or sodium chlorid."

After cleansing the nostrils and throat applications of iodin and glycerin or tannic acid and glycerin may be used, as:

℞.	gm. or c.c.		
Iodi	.30 to 2	or	gr. v to xxx
Glycerini	30		fl℥i

M. et sig.: Apply with probang once a day if the solution is a weak one, and once in two or three days if the solution is strong.

Or:

℞.	gm. or c.c.		
Acidi tannici	3		gr. xl
Glycerini	10	or	fl℥ii
Aquæ, ad	200		ad fl℥vi

M. et sig.: Use as a gargle, three times a day.

Or the glycerite of tannic acid may be swabbed over the throat daily. The milder of these preparations may be sprayed into the nostrils occasionally, if deemed advisable. It is also best always to begin, in the treatment of the nose and throat, with mild applications, as many patients develop too strong a reaction after almost any astringent application. Niles, however, says that he believes that: "In general the medicaments used are too weak."

In follicular pharyngitis he uses strong solutions of nitrate of silver applied after anesthetizing the mucous membrane with cocain. "Strong nitrate of silver solutions cause coagulation of albumin and the superficial destruction of diseased tissue, which is replaced by healthy membrane. The result of its action on the pharynx is similar to that obtained in the uterine cavity by curettage."

In atonic and in ulcerated pharyngitis he advises the use of capsicum, which he finds more satisfactory than any other treatment he has employed. In relaxed conditions of the

mucous membrane of the pharynx he applies a vinegar of capsicum as follows:

℞. c.c.
Aceti capsici (15 per cent.)..... 100| or fl℥iii

Sig.: After cleansing the throat of mucus apply a small amount with a swab.

[The swab should contain no more of the liquid than enough just to paint the surface of the throat, i. e., it should not be allowed to trickle down the pharynx. Also, the application should be made by the physician himself.]

In atrophic and follicular pharyngitis he prefers the following preparation of capsicum:

℞. gm. or c.c.
Oleoresinæ capsici .....1 to 5| or gr. xv to lx
Olei morrhuæ..... ad 100| ad fl℥iii

M. et sig.: To be applied, with a swab, by the physician.

"Under the capsicum treatment," Niles says, "nodules disappear, atrophic mucosæ become better nourished, passive congestion is relieved, and normal secretion is established."

Correspondence

Twenty-Day Catgut.

CINCINNATI, Nov. 30, 1907.

To the Editor:—Dr. Walter B. Chase, in his excellent article on "Buried Sutures and Ligatures," in THE JOURNAL, Nov. 30, 1907, says very correctly that "it is important to remember in this connection that catgut can be so over-chromicized as to render it unabsorbable and make it as objectionable as silkworm gut." This is all very true, but it does not go far enough. My experience has been to the effect that the heavy and hard catgut, chromicized to last twenty days, is very liable to last forever unless it is removed. It has not, in my experience, been the cause of any infection whatever, but it has repeatedly been the cause of a chemical disintegration of the tissues resulting in the formation of a sinus and the seemingly interminable discharge of chromicized and consequently entirely sterile serum. When this exosmotic current is once established absorption becomes obviously impossible. Even the smaller strands, Nos. 0 and 1, of twenty-day catgut are liable to cause this difficulty if they come in contact, even incidentally, with the fatty layers. As a consequence I have completely abandoned the use of twenty-day catgut of any and all sizes and, as a further consequence, I have no more yellow sap from my wounds. Nor do I have to remove knotted splinters from the field of operation some weeks after my patients are otherwise well. CHARLES A. L. REED.

Information Wanted on Inebriate Hospitals.

HATBORO, PA., Dec. 3, 1907.

To the Editor:—I am preparing a paper on the necessity of Pennsylvania enacting a law to build, equip and maintain an inebriate hospital, and will be very thankful to any physician or person experienced in institutional work for information for or against the project. I would like particularly to hear from Iowa, Massachusetts, Minnesota and New York, where such institutions are, will be, or have been in operation. The paper must be completed by January 1, so I must ask for prompt replies. I will thank in advance all who will be kind enough to respond. J. B. CARRELL.
Member of Committee of Asylum for Inebriates, of the Medical Society of the State of Pennsylvania.

Free Antitoxin in California Formerly.

LOS ANGELES, CAL., Dec. 2, 1907.

To the Editor:—Your editorial of November 30 relating to "Free Antitoxin in Illinois" calls up a little ancient history, as California did the same thing twelve years ago. The result was the early introduction of diphtheria antitoxin and reduction of mortality in California. It is to be regretted that subsequent boards of health in California did not perpetuate the work already begun by getting additional appropriations for the same purpose, as this is the ideal method.

J. H. DAVISSON.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

OPHTHALMIC DIAGNOSIS OF TUBERCULOSIS AND TYPHOID.

——, OHIO, Nov. 18, 1907.

To the Editor:—Kindly tell me, through your Queries and Minor Notes Department, how tuberculosis may be diagnosed by the ophthalmic reaction of Calmette and by Pirquet's cutaneous reaction? Where can I obtain literature on this subject? D.

ALBANY, N. Y., Nov. 23, 1907.

To the Editor:—In THE JOURNAL, Sept. 28, 1907, was an editorial referring to the typho-toxic reaction, or the ophthalmo-toxic reaction of typhoid, and a reference was made to the use of a preparation of typhoid bacillus producing an ophthalmic reaction for the diagnosis of typhoid fever. The original work, I believe, was done by Chantemesse in Paris. I have been unable to find definite information regarding the preparation of this material. Can you give me information as to how I may be able to find the method of preparation? CLINTON B. HAWN.

ANSWER.—1. The ophthalmic diagnosis of tuberculosis is a transfer to the conjunctival sac of von Pirquet's method of cutaneous inoculation with suitable variations in the technic. Von Pirquet dilutes Koch's old tuberculin about four times, places two drops on the forearm and then scarifies superficially through the tuberculin, as is done in ordinary vaccination. In the case of a tuberculous child a papule develops within twenty-four hours, which is at first bright red then dark red, and disappears in seven or eight days. For the ophthalmic diagnosis the tuberculin, diluted about 10 times, is dropped into the conjunctival sac. When performed on a tuberculous patient congestion is manifest in from three to five hours, the conjunctiva and caruncle become edematous and a certain amount of fibrinous secretion accumulates in the lower cul-de-sac. Within about 24 hours the reaction has disappeared. A. Calmette prepares a precipitated tuberculin for the test, and this is put out by the Pasteur Institute at Lille as "tuberculin test." The reaction appears of more value in children than in adults, and has impressed a number of observers favorably. Those suffering from advanced or miliary tuberculosis, or tuberculous meningitis, or who are in a cachectic state may not react. See A. Calmette, Breton, Painblau, and S. Petit, *Presse Médicale*, July 13, 1907. In the September *Folia Hematologica*, iv, No. 6, 1907, the recent literature is summarized.

2. As to the ophthalmic diagnosis of typhoid: Chantemesse presented his communication to the Paris Academy of Medicine, July 23, 1907, and the report is published in the *Bulletin de l'Académie de Médecine*, LXXI, No. 30. He precipitates a strong solution of soluble typhoid toxin with absolute alcohol and obtains a powder of which a fiftieth of a milligram dissolved in a drop of water and instilled into the lower lid of a typhoid patient gives a characteristic reaction, consisting of redness, lachrymation and a serofibrinous exudate. The affected eye can be distinguished from the other for two or three days after the instillation. In people who have other diseases, or in well people who have not recently experienced typhoid, slight redness and lachrymation occur, but disappear in three or four hours, and by the next day the eye appears like the other. The temperature and general condition are not affected by the experiment. Chantemesse believes that the reaction may give a very early sign of typhoid and that it is without danger.

RATTLESNAKE BITES.

MUSCATINE, IOWA, Dec. 3, 1907.

To the Editor:—Noting the article by Dr. Knowles, of Logan, Iowa, Oct. 26, 1907, on "Iodin Treatment of Rattlesnake Bites," I will add that Prof. Powell performed these experiments before the Rush Medical College, Class of 1869-70, and demonstrated that iodid of potassium was a specific for woorara poisoning. But my recollection is that the poison was obtained from the Indians of South America, and was not rattlesnake venom. Doubtless there are other Rush graduates who saw these demonstrations.

E. H. KING, M.D.

TREATMENT OF HEMOPTYSIS.

SCRANTON, PA., Nov. 27, 1907.

To the Editor:—In THE JOURNAL, Nov. 9, p. 1616, the treatment of hemoptysis is discussed. For several years I have been using ammonium carbonate with success. To children I give 2 or 3 grains, three or four times a day. I have used it in a number of cases when hemorrhage has been frequent and persistent, with immediate cessation of the hemorrhage. I would suggest that others use the drug and report their results. I have also used successfully small doses of atropin sufficient to cause dryness of the fauces, in some cases of mild, drizzling uterine hemorrhage. While the etiology and pathology of disease are very important, it is the ability to use therapeutic measures properly that should be considered the climax of our work, and it is in this field that modern medicine seems most in need of cultivation. L. M. GATES.

SOLUBILITY OF ASPIRIN.

CLEVELAND, OHIO, Nov. 22, 1907.

To the Editor:—Kindly inform me in your Queries and Minor Notes whether aspirin or salicylic acid acetic ether is soluble in liquor ammonii acetatis, and, if so, how permanent this solution is?

F. W. LINN.

ANSWER.—Acetyl salicylic acid (aspirin) is fairly permanent in acid solutions; by alkaline liquids it is decomposed into salicylic acid. Since the solution of ammonium acetate, official in the U. S. Pharmacopœia, is acid in reaction, a solution of acetyl salicylic acid in this liquid should be fairly permanent. Even if this liquid should become slightly alkaline accidentally the acidity of the acetyl salicylic acid should neutralize this and thus prevent the decomposition. Yet in spite of this, since the product is one from which salicylic acid is readily set free, it would seem desirable to administer it in substance. Further, its slight solubility will make it impossible to administer any appreciable quantity in an ordinary dose of solution of ammonium acetate.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, week ending Dec. 7, 1907:

Wickline, W. A., asst.-surgeon, left Army General Hospital, Presidio of San Francisco, on 20 days' leave of absence.

Ives, F. J., surgeon, will report in person to Brigadier General J. M. K. Davis, U. S. A., president of an Army retiring board, Washington, D. C., on Dec. 20, 1907, for examination by the board.

Clark, J. A., asst.-surgeon, granted 2 months' leave of absence.

Humphreys, H. G., asst.-surgeon, relieved from duty at Camp Captain John Smith, near Norfolk, Va., and ordered to Fort Terry, N. Y., for duty.

Harris, H. I., contract surgeon, ordered from Fort Snelling, Minn., to Fort Brady, Mich., for temporary duty.

Coffey, A. McD., contract surgeon, granted an extension of one month to his leave of absence.

Cullen, C. W., contract surgeon, granted leave of absence for one month.

Gunckel G. I., dental surgeon, left Fort Moultrie, S. C., and arrived at Fort Caswell, N. C., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending December 7, 1907:

Stokes, C. F., surgeon, detached from command of the Naval Hospital, San Juan, P. R., and ordered to report to the Surgeon General of the Navy at the Navy Department for special temporary duty.

Asst.-Surgeons H. L. Langnecker, A. J. Toulon, D. G. Sutton and E. W. Brown, appointed assistant surgeons from Nov. 29, 1907.

Owens, W. D., P. A. surgeon, commissioned P. A. surgeon from May 17, 1907.

Angwin, W. A., P. A. surgeon, commissioned P. A. surgeon from June 2, 1907.

Farwell, W. G., P. A. surgeon, commissioned P. A. surgeon from June 28, 1907.

Barber, G. H., surgeon, orders of November 11 modified; ordered to the Naval Hospital, Boston.

Bogert, E. S., Jr., surgeon, detached from the *Milwaukee* and ordered to the *Pennsylvania*.

Brister, J. M., P. A. surgeon, detached from the *Pennsylvania* and ordered to the *Milwaukee*.

Munson, F. M., P. A. surgeon, detached from the *Philadelphia* and ordered to the Asiatic Station, sailing from San Francisco, about January 6.

Belknap, J. L., asst.-surgeon, orders to the Naval Hospital, Boston, revoked; ordered to continue duty on board the *Wabash*.

Schaller, W. F., asst.-surgeon, detached from the *Brooklyn* and ordered to the *Pennsylvania*.

Thomas, G. C., acting asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Beyer, H. G., medical inspector, ordered to report at the Navy Department to the Surgeon General of the Navy for special temporary duty.

Vickery, E. A., asst.-surgeon, detached from duty at the Naval Hospital, Boston, December 12, and ordered to Washington, D. C., December 16, for examination for promotion and thence to duty at the Naval Hospital, Annapolis, Md.

Sutton, D. G., asst.-surgeon, ordered to duty at the Naval Hospital, Newport, R. I.

McGuigan, J., Pharmacist, detached from the Naval Hospital, Port Royal, S. C., and ordered to Washington, D. C., December 16, for examination for retirement and then home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Dec. 4, 1907.

Blue, Rupert, P. A. surgeon, detailed to attend the meeting of the State Health Officers of California, at Riverside, Dec. 3, 1907.

Roberts, Norman, asst.-surgeon, granted leave of absence for 7 days from Nov. 22, 1907, under Paragraph 191, Service Regulations.

Roberts, Norman, asst.-surgeon, granted extension leave of absence for 23 days from November 29, 1907.

Frost, W. H., asst.-surgeon, granted leave of absence for 1 day, Nov. 24, 1907, under Paragraph 210, Service Regulations.

Mullan, E. H., assistant surgeon, granted leave of absence for 4 days from Nov. 26, 1907, on account of sickness.

de Valin, Hugh, asst.-surgeon, granted leave of absence for one month from Dec. 16, 1907.

Dynan, N. J., acting asst.-surgeon, granted leave of absence for 7 days from Nov. 30, under Paragraph 210 Service Regulations.

Keatley, H. W., acting asst. surgeon, granted leave of absence for 3 days from Nov. 3 and 5 days from Nov. 13, 1907, under Paragraph 210, Service Regulations.

APPOINTMENTS.

Dr. Charles W. Hughes was appointed an acting asst.-surgeon for duty at Baltimore, Nov. 29, 1907.

Dr. Charles W. Naulty, Jr., was appointed an acting asst.-surgeon for duty at Perth Amboy Quarantine Station, N. J., Nov. 29, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., Dec. 2, 1907, for the purpose of making a physical examination of certain detained immigrants. Detail for the board: P. A. Surgeon L. E. Cofer, chairman, P. A. Surgeon M. J. White, and Acting Asst.-Surgeon F. R. Underwood, recorder.

Boards of medical officers were convened to meet Dec. 6, 1907, for the purpose of making physical examinations of certain officers of the Revenue-Cutter Service to determine their fitness for promotion, as follows:

At San Francisco: Surgeon H. W. Austin, chairman, and P. A. Surgeon O. H. Gardner, recorder.

At Port Townsend, Wash.: P. A. Surgeon M. J. White, chairman, and Acting Asst.-Surgeon F. R. Underwood, recorder.

At Newport News, Va.: Asst.-Surgeon G. L. Collins, chairman, and Acting Asst.-Surgeon A. C. Jones, recorder.

At Boston, Mass.: Surgeon R. M. Woodward, chairman, and Asst.-Surgeon T. W. Salmon, recorder.

At Portland, Me.: Surgeon F. C. Kalloch, chairman, and Acting Asst.-Surgeon A. F. Stuart, recorder.

At Mobile, Ala.: Surgeon G. M. Guiteras, chairman, and Acting Asst. Surgeon J. O. Rush, recorder.

At Detroit, Mich.: Surgeon Fairfax Irwin, chairman, and Asst.-Surgeon C. W. Chapin, recorder.

At Galveston, Tex.: P. A. Surgeon G. M. Corput, chairman, and Acting Asst.-Surgeon W. H. Gammon, recorder.

At Baltimore, Md.: Surgeon L. L. Williams, chairman, and P. A. Surgeon J. T. Burkhalter, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Dec. 6, 1907:

SMALLPOX—UNITED STATES.

Colorado: 5 Counties, Oct. 1-31, 13 cases.
Illinois: Belleville, Nov. 17-23, 1 case; Springfield, Nov. 22-28, 8 cases.
Kentucky: Covington, Nov. 24-30, 1 case.
Indiana: La Fayette, Nov. 19-25, 1 case.
Massachusetts: Fall River, Nov. 23, 2 cases.
Montana: 7 Counties, Oct. 1-31, 13 cases.
Pennsylvania: Altoona, Nov. 3-9, 2 cases.
Tennessee: Nashville, Nov. 24-30, 2 cases.
Texas: San Antonio, Nov. 17-23, 4 cases.
Virginia: Richmond, Nov. 17-23, 2 cases.
Washington: Spokane, Nov. 17-23, 12 cases; Tacoma, 2 cases.
Wisconsin: La Crosse, Nov. 17-23, 5 cases.

SMALLPOX—FOREIGN.

Argentina: Rosario, Aug. 1-31, 1 death.
Austria: Vienna, Nov. 3-9, 1 case.
Brazil: Bahia, Sept. 8-26, 113 cases, 7 deaths; Rio de Janeiro, Oct. 21-Nov. 3, 25 cases, 9 deaths.
Egypt: General, Oct. 1-21, 25 cases, 9 deaths.
France: Cannes, Oct. 1-31, 11 cases, 8 deaths.
Germany: Bremen, Nov. 3-9, 1 case.
Great Britain: Liverpool, Nov. 10-16, 1 case.
India: Bombay, Oct. 23-29, 1 death; Calcutta, Oct. 6-19, 3 deaths; Madras, Oct. 19-25, 1 death.
Italy: General, Nov. 1-7, 34 cases.
Java: Batavia, Oct. 13-19, 10 cases.
Malta: Nov. 3-9, 6 cases, 1 death.
Mexico: Aguas Calientes: Nov. 17-23, 1 death; Mexico, Oct. 13-19, 3 deaths.
Russia: Libau, Nov. 3-9, 1 case; Moscow, Oct. 20-Nov. 2, 4 cases; Odessa, Nov. 3-9, 1 case; St. Petersburg, Oct. 20-26, 1 case; Warsaw, Sept. 22-Oct. 5, 21 deaths.
Spain: Cadiz, Oct. 1-31, 16 deaths; Valencia, Nov. 3-17, 66 cases, 8 deaths; Vigo, Nov. 10-16, 2 deaths.
Turkey in Asia: Bagdad, Oct. 13-19, 32 cases, 6 deaths.

CHOLERA.

India: Calcutta, Oct. 5-19, 101 deaths; Madras, Oct. 16-25, 2 deaths; Negapatam, Oct. 5-11, 7 deaths.
Russia: General, July 1-Oct. 29, 10,107 cases, 4,772 deaths.
Russia in Asia: Astara, Nov. 9, 3 cases; Tiflis, Nov. 10, 1 death.
Philippine Islands: Manila, Oct. 13-19, 23 cases, 21 deaths.

YELLOW FEVER.

Cuba: Habana Province: Bainoa, Nov. 24-Dec. 3, 2 cases, 1 death; Habana, Dec. 2, 1 case, 1 death (from Union de Reyes).
Venezuela: La Guira, Oct. 28-Nov. 9 1 case.
West Indies: Barbados, Nov. 19-21, 7 cases, 4 deaths (6 cases from British cruiser, *Indefatigable*, in quarantine on Pelican Island).

PLAGUE—UNITED STATES

California: San Francisco, Nov. 27,-Dec. 1, 6 cases, 1 death; total to Dec. 9, 109 cases and 65 deaths.

PLAGUE—FOREIGN.

Australia: Cairns, Sept. 15-Oct. 12, 6 cases, 2 deaths.
Brazil: Bahia: Sept. 8-Oct. 26, 30 cases, 33 deaths; Para, Nov. 10-16, 54 deaths; Pernambuco, Sept. 16-30, 8 cases, 8 deaths; Rio de Janeiro, Oct. 21-Nov. 3, 14 cases, 6 deaths; Oct. 30, 7 cases and 2 deaths on S. S. *Orleanais* from Marseilles, via ports.
India: General, Oct. 6-19, 26,336 cases, 18,615 deaths; Bombay, Oct. 23-29, 22 deaths; Calcutta, Oct. 5-19, 14 deaths.
Japan: Formosa, Oct. 20-26, 1 case, 1 death.
Mauritius: Oct. 11-31, 32 cases, 30 deaths.
Peru: Paita, Nov. 4-10, 5 cases, 4 deaths.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of November, 1907:

ALABAMA.

Hand, L. M., Epes.
Nettles, D. R., Peterman.

ARKANSAS.

Baxter, G. S., Casa.
Bradford, W. S., Haynes.
Cothern, Thad., Walcott.
Hardin, Nina V., Fayetteville.
Spencer, S. J., White.
Woodul, T. W., Pine Bluff.

CALIFORNIA.

Alden, Eliot, Pasadena.
Allan, J. T. M., Los Angeles.
Brown, W. L., Los Angeles.
Chamberlin, H. H., Los Angeles.
Earle, C. H., Los Angeles.
Godin, A. F., Los Angeles.
Hamilton, J. K., Alameda.
Mackerras, R. H., Sierra Madre.
Martyn, George, Los Angeles.
Mattison, E. G., Pasadena.
Oldham, J. Y., Los Angeles.
Parker, W. H., Ocean Park.
Schmitz, John, Los Angeles.
Smith, Bertnard, Los Angeles.
Wellcome, E. Myrtle, Los Angeles.

COLORADO.

Freudenthal, Alfred, Trinidad.
McCartney, F. M., Denver.

CONNECTICUT.

Gibbs, J. A., Suffield.
Rowley, R. L., Hartford.

DISTRICT OF COLUMBIA.

Allen, Elzora B., Washington.
Wharton, J. J., Washington.

GEORGIA.

Rollins, J. C., Dalton.

ILLINOIS.

Adelsberger, L., Waterloo.
Andrews, R. B., Belvidere.
Blickhan, A. J., Quincy.
Fischer, A. Leroy, Hoffman.
Gordon, W. P., Carlyle.
Hamilton, Angelina G., Chicago.
Jenkins, J. T., Carthage.
Jones, C. D., Chicago.
Larsen, R. L., Chicago.
Oliver, A. H., Edwardsville.
Parr, S. M., Fountain Green.
Renner, F. A., Benld.
Rigg, J. R., Mt. Pulaski.
Rutkauskas, A. K., Chicago.
Shearer, W. A., Barrington.

INDIANA.

Ayres, A. S., Indianapolis.
Beaman, Z. M., Urbana.
Cook, J. H., Terre Haute.
Ginn, J. F., Elwood.
Mavity, D. E., Fowler.
Miller, B. E., Albion.
Nenneker, Henry, Evansville.
Noble, Sarah A., East Chicago.
Randall, E., Ambia.
Repass, R. E., Greenwood.
Spink, Urbana, Indianapolis.
Stark, J. Wesley, Inglefield.
White, C. S., Rosedale.
Whitsitt, S. A., Kent.
Wiggins, E. L., Elwood.

IOWA.

Amy, Harriette B., Decorah.
Ayres, F. D., Sabula.
Slater, E. W., Ellsworth.
Torrence, L., Blakesbury.

KANSAS.

Dykes, J. P. H., Stafford.
Fletnitz, W. T., Dorrance.
Howell, T. F., Ellis.
Jeffrey, A. B., Topeka.
Schwaup, S. J., Osborne.
Willson, E. L., Marysville.

KENTUCKY.

Anderson, C. M., Booneville.
Bailey, G. P., Harlan.
Carroll, J. R., Wilmore.
Crawford, C. L., Midway.
Crockett, H. S., Wilmore.
Earle, E. R., Paducah.
Floyd, W. M., Corydon.
Gates, H. W., Calhoun.
Gilbert, Hardin, Grayson.
Hamner, J. H., Alzey.
Hart, J. L., Trimble.
Hilton, N. W., Paducah.
Hopkins, Y. Frank, Rabbit Hash.
Lapsley, F. L., Paris.
Loar, P. A., Lookout.
McClure, Charles, Cox's Creek.
Moore, W. B., Crider.
Morris, Everett, Sulphur.
Shafer, J. H., Shepherdsville.
Sisson, Sanford, Wingo.
Taylor, J. M., Glasgow.
Thompson, A. L., Nebo.
Wilkerson, L. B., Russellville.
Williams, W. S., Latonia.

LOUISIANA.

Braun, Otto, Parcperdue P. O.
Ferguson, E. C., Wildwood.
Landry, L. H., New Orleans.

MAINE.

Coombs, G. A., Augusta.
Hall, C. C., Dover.
Hansen, N. C., Portland.

MARYLAND.

Bicknell, G. C., Pisgah.
Brent, H. W., Baltimore.
Brewster, J. H., Baltimore.
Downes, J. Raymond, Preston.
Kieffer, G. S. M., Baltimore.
Orem, F. S., Baltimore.
Wertz, T. H., Lineboro.
White, W. K., Baltimore.
Winner, J. L., Baltimore.

MASSACHUSETTS.

Barstow, A. T., Worcester.
Burke, F. R., Quincy.
Clancy, W. H., East Cambridge.
Corbett, J. J., Boston.
Dyer, E. Alden, Whitman.
Giblin, F. J., Boston.
Hedin, C. J., Tewksbury.
Horgan, J. A., Roxbury.
Kennelly, Julia G., Cambridge.
Lowney, D. J., New Bedford.
Morgan, John, Boston.
Penhallow, D. P., Boston.
Smith, S. F., Indian Orchard.
Smith, T. B., Lowell.
Snow, F. S., Boston.

MICHIGAN.

Abbott, Nelson, Lake City.
Blair, Wm., Ann Arbor.
DeKleine, Wm., Grand Haven.
Girard, C. L., Escanaba.
Gorsline, C. S., Battle Creek.
Knowles, E. W., Victoria.
Lusty, A. R., Britton.
Morse, F. L., Lake Odessa.
Pyle, Benjamin, Grand Rapids.
Speckhard, Adolph, Kawkawlin.
Torrey, H. N., Detroit.
Vendervoort, L. E., Battle Creek.
Van Ness, J. Howard, Allegan.
Walker, Colin, Barryton.

MINNESOTA.

Brown, P. F., Eveleth.
Freeman, G. H., St. Peter.
Pozdena, O. R., New Prague.
Withrow, M. E., International Falls.

MISSISSIPPI.

Barnett, S. L., Arnold.
Johnson, W. B., Rosedale.
Lehmberg, Edward, Artesia.
Sproles, H. F., Vicksburg.

MISSOURI.

Burnett, S. Grover, Kansas City.
Estill, W. G., Lawson.
Howell, C. F., Bedison.
Klenk, C. L., St. Louis.
Mosby, C. V., St. Louis.
Mynatt, A. J., Jerico Springs.
Naylor, Alva, Platte City.

NEBRASKA.

Bell, F. M., Grant.
Day, Clinton, Salem.
Piasecki, Carolin D., St. Paul.

NEVADA.

O'Neal, R. McW., Reno.

NEW HAMPSHIRE.

Bastian, G. L., Manchester.
Emerson, G. S., Fitzwilliam.
Towne, G. D., Manchester.

NEW JERSEY.

Funkhouser, E. B., Trenton.
Kimball, P. T., Lakewood.
Weeks, D. F., Skillman.

NEW MEXICO.

Heymann, H. W., E. Las Vegas.

NEW YORK.

Anderson, S. F., Brooklyn.
Byington, C. P., Ossining.
Campbell, J. A., New York City.
Carpenter, P. D., Pittsford.
Carr, W. J., Newburgh.
Dannreuther, W. F., New York City.
Davenport, H. I., Canandaigua.
Dutarl, A. A., New York City.
Green, F. B., Elmira.
Heckmann, Jakob, New York City.
Keator, Frank, Kingston.
Kessel, Leo., New York City.
Kessler, G. L., Brooklyn.
Laird, W. R., Auburn.
Law, F. M., New York City.
Matthews, A. C., Poughkeepsie.
Mead, A. M., Victor.
Oliver, W. A., Pen Yan.
Sill, E. Mather, New York City.
Stow, Bond, New York City.
Weber, E. W., White Plains.
Wood, J. Scott, Brooklyn.

NORTH CAROLINA.

Pollock, Raymond, Dover, N. C.

OHIO.

Bishop, P. S., Delta.
Breck, T. B., Cleveland.
Becker, H. A., Cleveland.
Campbell, C. S., Wauseon.
Cheetham, A. M., Cleveland.
Cosler, H. A., Fairfield.
Fenton, C. S., Orangeville.
Goll, A. G., Stryker.
Grove, A. C., Jewett.
Laffer, W. B., Cleveland.
Lauder, Edward, Cleveland.
LeFevre, W. I., Cleveland.
Linaweaver, A. H., Findlay.
Longfellow, J. V., Urbana.
Mallow, E. H., Dayton.
Myers, P. L., Toledo.
Neville, W. L., Lima.
Osmond, A. E., Cincinnati.
Rheinfrank, W. H., Perrysburgh.
Stiles, L. C., Austinburg.
Thompson, J. H., Greenspring.
Tripp, I. A., Cleveland.
Wells, J. H., Cleveland.

OKLAHOMA.

Applewhite, G. H., Tecumseh.
Henderson, W. E., Shawnee.
Lane, Thomas, El Reno.
Mayginnes, P. H., Cushing.

PENNSYLVANIA.

Cooke, D. T., Philadelphia.
Dillard, H. K., Jr., Philadelphia.
McLaughlin, J. J., Philadelphia.
Miller, E. L., Johnstown.
Sherger, J. A., Harrisburg.

SOUTH CAROLINA.

Young, J. R., Anderson.

TENNESSEE.

Barnett, W. H., Franklin.
Phillips, T. H., Briceville.

TEXAS.

Boone, H. C., Richmond.
Collier, J. F., Conroe.
Cowles, E. J., Henrietta.
Kimbrough, W. C., Denton.
Reed, J. Fleetwood, Wichita Falls
Ross, D., Denison.
Thomas, G. T., Emma.
Wassam, A. M., Galveston.
Wilson, M., Thornton.

VERMONT.

Newcomb, L. A., Montpelier.

VIRGINIA.

Tynes, A. L., Fisherville.

WASHINGTON.

Brenton, P. R., Mineral.
Garnett, R. S., Tacoma.
Seelye, W. K., Seattle.

WEST VIRGINIA.

Kelly, A. O., Wallace.
Moore, S. G., Coalton.
Scott, C. M., Bluefield.
Thompson, E. H., Bluefield.

PHILIPPINE ISLANDS.

Kneedler, H. D., Manila.

HAWAII TERRITORY.

Cooper, H. B., Aica Oahu.

Book Notices

TREATMENT. By Harry Campbell, M.D., B.S., etc., Physician to the Northwest London Hospital. Cloth. Pp. 421. Price, $3.00. New York: William Wood & Co., 1907.

When we read the opening words of Chapter I of this work, "Modern medical education fails in many ways, and in none more than this—that it often loses sight of the goal," we were at once aroused to a sympathetic and expectant interest; nor, when we had finished the book were we at all disappointed. The author is at once progressively conservative, and in some respects trenchantly and delightfully iconoclastic. It is necessary, however, to warn the prospective reader not to expect a guide-book on the details of drug therapeutics and specific therapeutic measures; and in this respect we can not help thinking that the title of the book is hardly well chosen. Not that it is not a work on treatment, for it is emphatically a book of the first principles of therapeutics, concerning which there can be no question that he who thoroughly masters them as expounded here, can not fail to become a better physician than he was before. It presents a modern philosophy of medicine. It covers the field of the physician's personality and the cooperation of the patient, defines the limitations of treatment, lays bare the arcana of the response of the organism to therapeutic influences, deals soundly and soberly with the psychic element in normal and abnormal functioning in health and disease respectively, and with its influence in the restoration of disturbed equilibrium to normal, contains much excellent hygienic advice, generally more sanely conservative than is usual on certain controverted points, and pays particular attention to the subject of diet, as was, indeed, only to be expected from one whose writings on that subject are already favorably known for their combination of depth and breadth. It seems difficult in a work so expansive in scope as this, to single out any special parts for commendation, yet we can not

refrain from pointing to the chapters on "The Blood Plasma Therapeutically Considered and the Connection of the Plasma," and to the three on "Psychotherapeutics," as exemplifying particularly what we mean above by the term "a modern philosophy of medicine."

DYSPNEA AND CYANOSIS: Part 1 of Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Edmund von Neusser, M.D., Professor of the Second Medical Clinic, Vienna. Authorized English Translation by Andrew MacFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis, Albany Medical College. Pp. 253. Cloth. Price, $1.50. New York: E. B. Treat & Co., 1907.

Professor Neusser's reputation assures a welcome to whatever he writes. This volume is a clinical study of dyspnea and cyanosis. As is to be expected, it is exhaustive of the subject, viewed from the clinical standpoint. A brief first chapter discusses the conditions which induce dyspnea and cyanosis. "Insufficiency of oxygen causes dyspnea if it occurs suddenly," but a slight increase of carbon dioxid plays a part even in these cases in causing it. "In slowly developing respiratory difficulties the accumulation of carbon dioxid in the blood should be held primarily responsible while deficient oxygen probably plays a subsidiary rôle." Cyanosis is "not occasioned by the carbon dioxid but by a changed percentage of oxygen and the blue color of the peripheral veins is attributable to interference with light rays in the skin." The book is divided into two parts. The first is devoted to dyspnea and cyanosis in disorders of the respiratory organs and the second to them in disorders of the circulatory organs. Chapters and sections are devoted to a discussion of the subject in each disease. To illustrate the completeness of the work: in tuberculosis of the lungs in which dyspnea and cyanosis are not common symptoms, the author describes in detail fifteen different ways in which they may be produced. His method will be better appreciated by this quotation under the heading "Aortic Lesions": "In affections of the mitral valve there is, beside the congestion of the lungs, also a stasis in the oblongata which increases on lying down, owing to the retarded flow of blood, and compels patients to select a more upright posture in bed. In insufficiency of the aortic valve, however, the important dyspneic factor is the ischemia of the oblongata. There is, as it were, the pulsus celer which poorly nourishes the center of respiration. In some cases the periaortic processes and the irritation they exert on the branches of the vagus have a certain importance in the causation of the asthmatic attacks. This also explains why in the dyspnea and cyanosis of mitral affections, digitalis is an especially successful remedy, while in the dyspnea of aortic insufficiency sedative remedies like potassium bromid and opium preparations are more effective. Cyanosis, however, occurs also in insufficiency of the aortic valve, if there are complicating affections of the mitral or if bulging of the interventricular septum due to marked excentric hypertrophy of the left ventricle restricts the space of the right ventricle, which in its turn becomes hypertrophied, if fatty degeneration of the myocardium makes the left ventricle inefficient, or if complicating affections of the respiratory system and of the serous membranes as pericarditis develop. In aortic stenosis, therefore, unless it attains a high degree and becomes complicated, neither dyspnea nor cyanosis is present in the pathologic picture." The reader feels constantly that he is getting the conclusions of a most acute observer and clear reasoner. The facts contained in this little volume will interest every practitioner and no one can read it without surprise at the amount and variety of the author's information. Indeed, the book is so full of condensed information it must be read slowly that it may be mentally digested and assimilated.

HAY-FEVER, HAY-ASTHMA. Its Causes, Diagnosis and Treatment. By William Lloyd, Surgeon-in-Charge of the Nose, Ear and Throat Department, Kensington General Hospital. Cloth. Pp. 96. Price, $1.00. London: H. J. Glaisher; Chicago: W. T. Keener & Co., 1907.

This monograph, according to the author's statement, is written to "record certain opinions which the author holds on the causes and effective treatment of hay-fever" and not with any intention or desire to "supply a long-felt want." The modesty of this position is attractive and reassuring. We have seen for many years, volume after volume appear, each one of which was intended to settle definitely the question of causation and clinical identity of hay-fever, each one of which triumphantly refuted the opinions expressed in those which had gone before. Dr. Lloyd's little book does not pretend to be an exhaustive treatise and deals with this interesting subject in a readable manner. After reviewing at some length the various theories advanced by different writers regarding the exciting cause of this most unpleasant malady, Dr. Lloyd states that in his opinion there is but one primary exciting cause for hay-fever as it occurs in summer and that is the pollen of grasses. The main predisposing cause he considers to be a hypersensitive condition or susceptibility of the nasal mucous membrane with a diseased or at least the irritable condition of certain nerve centers as a subordinate predisposing factor. These three conditions he considers essential in the etiology of hay-fever. The susceptibility of the nasal membrane he attributes to two causes, hypersensitive areas and pathologic conditions of abnormalities which cause obstruction and congestion. For the detection of these areas he uses a probe and a weak solution of silver nitrate or iodin. The author divides treatment into prophylaxis and palliation. Under the first he considers local treatment the only plan which offers any advantages. Baths, drugs, etc., are practically useless. The removal of the patient to some place beyond the reach of irritating influence is effective, but in many cases impossible and in most cases is vexatious. Palliative treatment consists of the use of cocain, boric acid, adrenalin solution, etc. More important, however, is the curative treatment, which consists of the correcting of pathologic conditions or deformities and the destruction of hypersensitive areas. Minute directions and comments along this line are given, followed by reports of twenty illustrative cases.

HANDBOOK OF SKIN DISEASES and Their Treatment. By Arthur Whitfield, M.D., Lond., F.R.C.P., Professor of Dermatology at King's College. Cloth. Pp. 320. Price, $2.40. New York and London: Longmans, Green & Co., 1907.

The author of this handbook is not only a well trained and careful clinician, but also a practical pathologist, and brings to his work a familiarity with modern laboratory methods. We may, therefore, expect well of him, and insofar as the limitations which he has prescribed for himself in this work allow, he does not disappoint us. The book has the advantages and the disadvantages of all manuals. It presents a good orientation of its subject, but the limitations of space do not allow the various diseases to be considered with satisfactory fulness. A few diseases, for example ringworm, in which the author has particular interest, are fully considered. One valuable feature of the book is the descriptions of easily applied laboratory methods which are available for the diagnosis of cutaneous diseases. There is also a brief appendix on laboratory methods in dermatology which is interesting and of practical value. The author's style is easy and clear, but is occasionally colloquial—that characteristic so common in British authors, which they so much condemn in others.

On the whole, within its limitations, the book is a good piece of work. Criticism of specific details here and there might be made. For example, the author says that scabies among the well-to-do may be considered a venereal disease. Surely that is not the case in this country. Very frequently he does not define a disease before beginning its consideration, so that the student must often go ahead to read the details of a subject before he has been told what he is reading about. The clinical illustrations do not compare in abundance with what we have learned to expect in similar American textbooks. A few of them are very good; most of them, however, appear as though they had been taken by flashlight and are lacking in detail. The illustrations of syphilis are numerous and good. There are a number of illustrations from microphotographs and these are nearly uniformly excellent.

ROENTGEN RAYS AND ELECTRO-THERAPEUTICS. With Chapters on Radium and Phototherapy, by Mihran Krikor Kassabian, M.D., Director of the Roentgen Ray Laboratory of Philadelphia Hospital, etc. Cloth. Pp. 545. Price, $3.50. Philadelphia and London: J. B. Lippincott Co., 1907.

The growing importance of physical therapeutics of which electricity forms an important part and the remarkable growth of *x*-ray diagnosis and therapy render a comprehensive work on these subjects welcome. Kassabian has produced such a

work in which the older principles of electro-therapeutics find their place beside the latest information on the Roentgen rays, radium and phototherapy. The main facts of the science of electricity are stated succinctly and plainly, but with sufficient fulness to meet the needs of the physician. Electrodiagnosis receives thorough treatment, and the physiology of nerve and muscle is discussed in a separate chapter. This is followed by the therapeutic applications of the forms of electricity so far considered grouped under diseases and symptoms. High-frequency currents are described in a separate chapter. The consideration of the Roentgen rays occupies the larger part of the book. The apparatus and technic are very carefully described. The chapter on therapeutic applications reflects the unsettled condition of *x*-ray therapy. The chapter is made up largely of statements gleaned from reports of various observers giving the number of cases treated successfully. There is little attempt at critical review, which is, perhaps, hardly possible at the present stage.

CLINICAL PSYCHIATRY. A Text-book for Students and Physicians, Abstracted and Adapted from the Seventh German Edition of Kraepelin's "Lehrbuch der Psychiatrie." By A. Ross Diefendorf, M.D., Lecturer in Psychiatry in Yale University. Cloth. Pp. 562. Price, $3.75. New York: The Macmillan Co., 1907.

This edition of the work of Dr. Diefendorf based on the later edition of Kraepelin's "Lehrbuch der Psychiatrie," will probably receive no less favor than did the earlier edition of 1902. A few changes have been made to adapt it for use as a handbook and the original portion is mainly restricted, as stated in the preface, to the remarks on treatment. Kraepelin's views, especially as to the classification of insanity, have been so largely accepted in this country and elsewhere that this abstract of his latest edition is likely to be adopted as a text-book by many institutions in this country.

IMMUNE SERA. A Concise Exposition of Our Present Knowledge Concerning the Constitution and Mode of Action of Antitoxins, Agglutinins, Hemolysins, Bacteriolysins, Precipitins, Cytotoxins and Opsonins. By Dr. Chas. Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. Second Edition, Rewritten, First Thousand. Cloth. Pp. 154. Price, $1.50. New York: John Wiley & Sons, 1907.

In this little book of 154 pages Dr. Bolduan gives a clear and concise account of the various so-called antidotes, their constitution and mode of action. Short chapters are also inserted in which snake venoms and their antisera and serum sickness are discussed. On account of the lucid manner in which the essential facts concerning the subjects in question are stated, the book will prove especially useful to physicians and others who wish to obtain a good general knowledge of this phase of immunology. The book merits hearty recommendation.

THE PRACTITIONERS' VISITING LIST FOR 1908. A pocket-sized book containing data and ruled blanks for memoranda and for recording details of practice. Weekly, monthly, and 30-patient perpetual editions, containing 32 pages of data and 160 pages of classified blanks. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil and rubber, and calendar for two years. Price, postpaid, $1.25. Thumb letter index, 25 cents extra. Philadelphia: Lea Brothers & Co., 1907.

THE MEDICAL RECORD VISITING LIST FOR 1908. A pocket-sized book containing important data and ruled blanks for memoranda and details of practice. Bound in flexible leather with flap pocket and pencil. Price, $1.25 to $4.00 for the various editions, 30 patients a week, 60 patients a week, dated or undated, etc. New York: William Wood & Co., 1907.

These visiting lists are so well known to most physicians that a detailed description is hardly necessary, beyond what is given above. The data in both are very valuable. The differences between various visiting lists consist largely in the method of keeping the records and the practitioner must see the book to decide as to its adaptability to the system which he uses. If he uses no system!—here is an opportunity for him to mend his ways.

Marriages

FRANK C. ARD, M.D., to Miss Ethelwyn Hoyt, both of Plainfield, N. J., December 12.

HERBERT A. GALE, M.D., to Miss Cornelia Mansfield, both of San Francisco, December 1.

PETER BASSOE, M.D., Chicago, to Miss Miriam Gardner of Pasadena, Cal., November 30.

HARRY E. CLAY, M.D., Salem, Ore., to Miss Helen Sword of Portland, Ore., November 27.

LOUIS A. HARRIS, M.D., St. Charles, Idaho, to Miss Fannie T. Levy of Chicago, November 25.

HARRY SMITH, M.D., Los Angeles, Cal., to Miss Daisy Belle Cross of Alameda, Cal., recently.

JOHN MCCABE, M.D., to Miss Harriet Virginia Peircy, both of New York City, November 23.

JESSE J. HEATON, M.D., to Miss Fenn Hartman, both of McCutchenville, Ohio, November 14.

CHARLES S. ALBERTSON, M.D., to Miss Maude Robbins, both of South Whitley, Ind., November 20.

FREDERIC N. NICHOLS, M.D., Denton, Md., to Miss Eliza Garey, at Denton, Md., November 27.

JOHN KNOX MCQUARRIE, M.D., Chicago, to Miss Fannie Maxwell of Millersburg, Ohio, December 4.

MARINUS L. HOLM, M.D., Lansing, Mich., to Miss Martha Kohhase of Wells, Minn., November 28.

THOMAS F. ASH, M.D., Rockland, Mass., to Miss Genevieve White of West Quincy, Mass., recently.

MARK A. BROWN, M.D., Cincinnati, to Miss Alice Grammer Wherry, at Norfolk, Va., November 23.

WILLIAM S. BENNER, M.D., Columbus, Ohio, to Mrs. Maggie Davidson of Ironton, Ohio, November 19.

JOHN ELDON HYNES, M.D., to Miss Martha Fallis Harris both of Minneapolis, Minn., November 27.

WILLIAM A. RANDEL, M.D., New York City, to Miss Mabel L. Pierce of Methuen, Mass., November 25.

ALBERT WILLIAM HANCOCK, M.D., to Miss Lucy Lees Schofield, both of Lawrence, Mass., November 27.

LORAN W. JORDAN, M.D., Wabash, Ind., to MINNIETTA C. FLINN, M.D., of Monroe, Wis., November 28.

P. P. NOTTINGHAM, M.D., Carrollton, Va., to Miss Fanny Dorley Jordan, at Suffolk, Va., November 27.

JAMES MONCURE BLAND, M.D., Shackelford, Va., to Miss Rosa Pearl Wilroy, at Driver, Va., November 27.

CHARLES J. T. ZEIGLER, M.D., Columbus, Ohio, to Miss Madge Kintz of Logan, Ohio, at Cincinnati, November 24.

ROBERT S. TYSON, M.D., Frederick, Md., to Miss Belva Vesta Holland of Exeter, Ont., at Philadelphia, November 23.

Deaths

Edmund Samuel Foster Arnold, M.D. London, 1842; M.R.C.S. England, 1844; Jefferson Medical College, Philadelphia, 1848; who practiced in New York City in 1848 to 1854, and from 1854 to 1872 in Yonkers, N. Y., and thereafter in Newport, R. I., until ten years ago, when he moved to Jacksonville, Fla.; treasurer of the International Medical Congress in 1887; sometime physician and surgeon to the Newport (R. I.) Hospital; fellow of the New York Academy of Medicine, and member of the medical societies of the State of New York and County of Westchester; from 1862 to 1868 health officer of Yonkers, and from 1871 to 1872 surgeon of the Third Infantry, N. G. S. N. Y.; died at his home in Jacksonville, Fla., November 22, aged 87.

James Avery Draper, Sr., M.D. University of Pennsylvania, Department of Medicine, 1860; a member of the Delaware State and Newcastle County medical societies; surgeon in the Army during the Civil War; for more than 20 years local surgeon for the Pennsylvania System at Wilmington; formerly president of the state medical society and State Board of Health, and incorporator of the Delaware Hospital; died suddenly at his office in Wilmington, November 24, from acute dilatation of the heart, aged 72.

Sidney I. Small, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1872; College of Physicians and Surgeons in the City of New York, 1873; a member of the American Medical Association; councilor of the Eighth Michigan District Medical Society; for more than 25 years a member of the staff of St. Mary's Hospital; once alderman of Saginaw; died at his home in that city, from cerebral hemorrhage, after a brief illness, November 23, aged 65.

William Curtis Whitney, M.D. Chicago Homeopathic Medical College, 1898; surgeon of the Fourth Ohio Infantry, U. S. V., during the Spanish-American War; a member of the board of education of Westerville, Ohio; member of the legislature from Franklin County; died at a private hospital in Columbus, November 22, from pneumonia, consequent on burns received while trying to save live stock in a fire in his barn five days before, aged 33.

George H. Sheldon, M.D. Barnes Medical College, St. Louis, 1902; a member of the Missouri State Medical Association and St. Louis Medical Society of Missouri; for two years oculist to the St. Louis City Hospital; a noted athlete, and once champion high diver of the world; died at his home in St. Louis, November 25, from heart disease, after an illness of nine months, aged 33.

Edward Samuel Gates, M.D. Miami Medical College, Cincinnati, 1894; of Cincinnati; a member of the American Medical Association; for several years demonstrator of anatomy and instructor in osteology in Miami Medical College; was instantly killed at Rendeumb Junction, November 27, in collision between his automobile and a Panhandle passenger train, aged 42.

Randolph Barksdale, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1852; surgeon on the staff of General Longstreet throughout the Civil War; from 1870 to 1896 superintendent of the Central State Hospital for the Colored Insane, Petersburg, Va.; died at his home in that city, November 18, after an invalidism of ten years, aged 76.

Willoughby Dayton Miller, M.D., *Magna Cum Laude*, Berlin University, 1887, Ph.D., D.D.S., Sc.D.; formerly professor of dentistry in the University of Berlin, and afterward a member and dean of the dental department of the University of Michigan, Ann Arbor; died at the Newark (Ohio) Hospital, July 27, five days after an operation for appendicitis, aged 53.

Eugene W. Humphreys, M.D. University of Maryland School of Medicine, Baltimore, 1872; a member of the Medical and Chirurgical Faculty of Maryland, and secretary of the Wicomico County Medical Society; a member of the staff of the Peninsular General Hospital; died at his home in Salisbury, from acute nephritis, November 24, aged 59.

John Adam Schmitt, M.D. University of Giessen, Germany, 1875; a member of the American Medical Association; gynecologist to the Metropolitan Hospital Dispensary and president of the New York German Medical Society; died suddenly from heart disease, while making a professional call in New York City, November 26, aged 65.

Caleb Roser Massey, M.D. University of Maryland School of Medicine, Baltimore, 1892; a member of the Medical Society of Virginia and the Spottsylvania County Medical Society; chairman of the county board of supervisors; died at his home, near Spottsylvania Courthouse, Va., November 28, after an illness of several months, aged 40.

William Shaw Bowen, M.D. Medical School of Harvard University, Boston, 1867; a veteran of the Civil War; for many years a special correspondent of the *New York Herald* and *New York World;* for a time a surgeon in the Navy; died suddenly from cerebral hemorrhage, at his home in East Greenwich, R. I., November 24, aged 65.

William H. Andrews, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1849; a Confederate veteran, who served during the Civil War in Ward's regiment of Morgan's command; one of the oldest practitioners of Trousdale County, Tenn.; died at his home in Hartsville, November 16, from senile debility, aged 82.

Ashbel Starr Rockwell, M.D. Faculty of Medicine of Queens University and Royal College of Physicians and Surgeons, Kingston, Ont., 1872; a member of the medical societies of the State of New York and County of Monroe, and of the Pathological Society of Rochester, N. Y.; died at his home in that city, November 27, aged 64.

John M. Julian, M.D. Long Island College Hospital, Brooklyn, N. Y., 1880; a member of the American Medical Association; a veteran of the Franco-German War, and a well-known French practitioner of the Hudson River valley; died at his home in Pleasant Valley, N. Y., November 24, from spinal disease, after a prolonged illness, aged 53.

John Joseph Bossard (Years of Practice, S. C.); a member of the South Carolina Medical Association and Sumter County Medical Society; surgeon in the Confederate service during the Civil War; state senator, and for several terms mayor of Sumter; died at his home in that city, November 28, aged 62.

Thomas W. Smith, M.D. College of Physicians and Surgeons, Baltimore, 1876; New York University Medical College, 1887; resident physician at Bethel Military Academy, Va., for 30 years; died at his home near that place, from peritonitis, November 27, after an illness of ten days, aged 52.

Frank Nathan Pampinella, M.D. New York Homeopathic Medical College and Hospital, New York City, 1883; of Philadelphia; died in the Medico-Chirurgical Hospital, in that city, November 22, from the effects of morphin said to have been self-administered, with suicidal intent, aged 44.

David Stephens, M.D. Berkshire Medical College, Pittsfield, Mass., 1863; a member of the Medical Society of New Jersey and Middlesex County Medical Society; a veteran of the Civil War; formerly of New Brunswick, N. J.; died at the home of his brother in Addison, N. Y., November 23.

Frederick P. Cave, M.D. New York University Medical College, New York City, 1883; a member of the American Medical Association; of Modesto, Cal.; for 22 years a resident of Los Angeles; died at the State Hospital, Stockton, November 28, after an illness of several months, aged 54.

Aaron D. Davidow, M.D. College of Physicians and Surgeons, Chicago, 1894; a member of the medical societies of the State of New York and County of Orange; formerly of Florida, N. Y.; died at his home in Brooklyn, November 18, after an operation for disease of the throat, aged 40.

Richard Morris, M.D. University of Buffalo (N. Y.) Medical Department, 1870; for several years sheriff and coroner of Tuscola County, Michigan, and health officer of Vassar, Mich.; died at his home in that place, November 27, from pneumonia, after an illness of three days, aged 61.

Thomas Wildes, M.D. New York Homoeopathic Medical College and Hospital, New York City, 1876; a member of the medical staff of the New York health department; died suddenly in his apartments in New York City, November 28, from cerebral hemorrhage, aged 68.

Halley M. Wenner, M.D. College of Physicians and Surgeons, Baltimore, 1892; for several years school director and registrar of vital statistics of Plymouth, Pa.; died at his home in West Nanticoke, Pa., November 22, from pneumonia, after an illness of one week, aged 41.

Archie Woodward Sims, M.D. Birmingham (Ala.) Medical College, 1901; formerly of Birmingham, Ala.; resident physician at the Ketona (Ala.) rock quarries, died at his home in Ketona, from cerebral hemorrhage, November 26, after an illness of three days, aged 32.

Joshua Vernon Porter, M.D. Long Island College Hospital, Brooklyn, N. Y., 1878; for several years principal of the schools of New Salem and Connellsville, Pa., and for 20 years a practitioner of Pittsburg, died at his home in East Millsboro, Pa., November 26, aged 61.

William H. Neely, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1879; a member of the Tennessee State Medical Association and Henderson County Medical Society; died at his home in Darden, Tenn., November 26, from pneumonia, aged 57.

Charles Howard McClees, M.D. University of Iowa, College of Medicine, Iowa City, 1881; a member of the American Medical Association; died at his home in Marne, Iowa, November 23, from cerebral hemorrhage, after an illness of only a few hours, aged 49.

Artemis O. Wotring, M.D. Detroit (Mich.) College of Medicine, 1887; a member of the Michigan State and Lewanee County medical societies, was instantly killed by an explosion of a gas plant at his home in Ogden Centre, Mich., November 30, aged 46.

Edward H. Eisenbrey, M.D. Hahnemann College and Hospital, Philadelphia, 1870; a veteran of the Civil War and for 34 years a practitioner of Gloversville, N. Y.; died from cerebral hemorrhage, November 22, while giving testimony in a court room in that city, aged 67.

Lancelot B. Dawson, M.D. University of Michigan, Department of Surgery, Ann Arbor, 1887; died in his office in Monte Vista, Colo., from the effect of gunshot wounds of the head said to have been self-inflicted with suicidal intent, November 14, aged 49.

Finley N. Willis, M.D. Kentucky School of Medicine, Louisville, 1904; a member of the Kentucky State and Hardin County medical societies; died at his home in Vine Grove, Ky., November 20, from tuberculosis, after a lingering illness, aged 25.

Carlton K. Chubbuck, M.D. (License, Neb., 1871); a member of the Nebraska State and Johnson County medical societies; for 36 years a practitioner of Tecumseh, Neb.; died at his home in that city, November 27, after a prolonged illness, aged 70.

James Ledlie Adams, M.D. Rush Medical College, Chicago, 1902; of Chicago; member of the Illinois State and Cook County medical societies; died at the Baptist Hospital, Chicago, December 3, from endocarditis, after an illness of four weeks, aged 29.

William B. Morley, M.D. Louisville (Ky.) Medical College, 1875; Bellevue Hospital Medical College, New York City, 1887;

a member of the Wisconsin State and Washburn County medical societies; died at his home in Shell Lake, November 20, aged 51.

Antonio Leon Bilisoly, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1857; surgeon in the Confederate service during the Civil War; died at his home in Portsmouth, Va., November 20, after an illness of eighteen days, aged 71.

John Buxton Carr, M.D. University of Maryland, School of Medicine, Baltimore, 1885; a member of the Medical Society of the State of North Carolina and the Edgecomb County Medical Society; died at his home in Old Sparta, N. C., November 20.

George Archbold, M.D. University of Edinburgh, Scotland; eminent as a consulting chemist; in 1890 appointed chief chemist of the War Department; died in Jersey City, N. J., September 16, from carcinoma of the liver, aged 58.

Richard Jackson Stanton, M.D. College of Medicine, Syracuse (N. Y.) University, 1883; of New York City; died at the home of his sister in Syracuse, N. Y., November 21, from heart disease, after an illness of three months, aged 50.

David Barnes Drewry, M.D. Medical College of Virginia, Richmond, 1897; a member of the Medical Society of Virginia and Southampton County Medical Society; died at his home in Drewryville, Va., November 29, aged 35.

William Turner Hartshorn, M.D. St. Thomas Hospital Medical College, London, 1855; L.R.C.S. England, 1875; a resident of Junction City, Kan., for 35 years; died at his home in that city, November 23, aged 78.

Ernest Augustus Wehrman, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1872; died at his home in Indianapolis, November 25, six weeks after an operation for pancreatic cyst, aged 59.

William J. O'Neil, M.D. Long Island College Hospital, Brooklyn, N. Y., 1895; formerly city physician of New London, Conn.; died at the home of his parents in Elmira, N. Y., November 21, aged 34.

William C. Barnes, M.D. Barnes Medical College, St. Louis, 1895; of Mulberry Grove, Ill.; a member of the Illinois State and Bond County medical societies; died in St. Louis, November 27, aged 36.

William C. Bomar, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1883; died at his home in Water Valley, Ky., November 24, from nephritis, after an illness of several months.

Carl Peter Mueller, M.D. University of Bonn, Germany, 1868; of Andrew, Iowa; is reported to have died from suffocation by falling into a gutter in Bellevue, Iowa, November 27, aged 62.

Jeremiah A. Smith, M.D. Columbus (Ohio) Medical College, 1889; a veteran of the Civil War; died at his home in Nevada, Ohio, from pneumonia, November 17, after a brief illness, aged 66.

Nathaniel B. Stubbs, M.D. Western Reserve Medical College, Cleveland, 1872; of Stryker, Ohio; died in St. Vincent's Hospital, Toledo, November 20, after a surgical operation, aged 69.

Eugene L. Boullaise, M.D. University of Paris, France, 1855; a practitioner of North Adams, Mass., died at Hartwellville, Vt., November 25, after an illness of four months, aged 77.

Watts J. Bachelor (Years of Practice, Mich.); a practitioner of Oxford, Mich., for thirty years; died at his home in that place, November 26, after an illness of four days, aged 58.

John Schoenfeld (License, Pa.), who practiced in Reading, Pa., for nearly half a century, died at his home, November 20, from gastritis, after an illness of two weeks, aged 74.

Emery Ballou, M.D. University of St. Charles (Ill.), Medical Department, 1845; died at his home in Nunda, Ill., November 27, after a prolonged illness, aged 83.

A. R. Scruggs, M.D. Medical Department, University of Nashville, Tenn., 1861; died at his home in Horse Cave, Ky., November 23, from paralysis, aged 73.

Edward J. Jones, M.D. College of Physicians and Surgeons, Baltimore, 1892; died at his home in New Hampden, Va., November 19, from nephritis.

Austin M. Porter (License, Ind., 1889); died at his home in State Line, Ind., November 16, from shock following a fall two weeks before, aged 84.

Rater A. Gray, M.D. Louisville (Ky.) Medical College, 1903; died at his home in Portersville, Ind., November 20, from pneumonia, aged 28.

Death Abroad.

Moritz Schmidt, M.D., the well-known laryngologist of Frankfurt a. M., died December 7, aged 69. He has published numerous works on his specialty and on the early diagnosis of aneurism of the aorta, affections of the upper air passages, etc. He removed a polypoid growth from the throat of the present emperor of Germany some years ago.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

KENTUCKY State Board of Health, Louisville, December 17. Secretary, Dr. J. N. McCormack, Bowling Green.

VIRGINIA Medical Examining Board, Staunton, December 17-20. Secretary, Dr. R. S. Martin, Stuart.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, January 2-3. Secretary, Dr. Gardner T. Swarts, Providence.

MINNESOTA State Board of Medical Examiners, St. Paul, January 2-4. Secretary, Dr. W. S. Fullerton, 215 American National Bank Building, St. Paul.

UTAH State Board of Medical Examiners, Salt Lake City, January 6. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, January 6-7. Secretary, Dr. Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, January 7. Secretary, Dr. S. D. Van Meter, 1723, Tremont St., Denver.

WASHINGTON State Medical Examining Board, Spokane, January 7. Secretary, Dr. C. W. Sharples, Seattle.

OREGON Board of Medical Examiners, Portland, January 7-9. Secretary, Dr. Byron E. Miller, The Dekum Building, Portland.

NORTH DAKOTA State Medical Examining Board, Grand Forks, January 7-9. Secretary, Dr. H. M. Wheeler, Grand Forks.

VERMONT State Board of Medical Registration, State House, Montpelier, January 7-9. Secretary, Dr. W. Scott Nay Underhill.

SOUTH DAKOTA State Board of Medical Examiners, Mitchell, January 8-9. Secretary, Dr. H. E. McNutt, Aberdeen.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, January 9-13. Secretary, Dr. George C. Ober, Washington.

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, January 13. Secretary, Dr. J. A. Massie, Santa Fe.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, January 14. Secretary, Dr. V. H. Hallman, Hot Springs.

ARKANSAS Eclectic Board of Medical Examiners, Little Rock, January 14. Secretary, Dr. A. J. Widener, Little Rock.

NEW HAMPSHIRE State Board of Medical Examiners, Concord, January 14-15. Regent, Mr. H. C. Morrison, Concord.

WISCONSIN Board of Medical Examiners, Plankinton Hotel, Milwaukee, January 14-16. Secretary, Dr. J. V. Stevens, Jefferson.

Cornell and California Advance Entrance Requirements.—The medical departments of the University of California and of Cornell University have just advanced their entrance requirements. The statement from the University of California is as follows:

"For some years past the Medical Department of the University of California has required of matriculants two years of work in a recognized college or university, including two years of work in physics, chemistry and biology, and also a reading knowledge of German and of French. These prerequisites were equal to sixty-eight units, or two years of university work. No student has ever presented himself for matriculation on the minimum basis allowed by the requirements, but all have offered three or four years' university work. The University of California has now advanced the requirements to three years' resident work in a recognized college or university, the prerequisites remaining as before. This standard becomes operative in 1908. Students presenting three years' regular work of the University of California, including the denominated prerequisites (such alone being admitted to the department), are permitted by the collegiate department of the University of California to elect the work of the first year of the medical department as the work of the fourth or last year of their collegiate course, and on the completion of this work, are granted the degree of B.S. Anatomy, physiology and pharmacology are regular subjects in the graduate department of the University of California, and may be elected as majors or minors leading to the regular degree of doctor of philosophy. The courses in anatomy, physiology, pathology and pharmacology may also be elected as regular undergraduate courses in the collegiate department, subject alone to the prerequisite requirements."

Dr. John Rogers, secretary of the medical department of Cornell, writes:

"The faculty of the Cornell University Medical College, after mature deliberation, has concluded that the usual 'high-school'

education so commonly accepted as sufficient preparation for the study of medicine is inadequate. The great advances of recent years in all the natural sciences have led to corresponding advances in the practice of medicine and surgery and this has overburdened the medical curriculum as now in operation for the average student to such an extent that the present four-year course in medicine is impossible. Too large a proportion of the time is given up to fundamental and non-professional instruction in chemistry, physics, biology and other kindred subjects on which the knowledge of diseased conditions is founded and too small a proportion to the specialized information which is imperative in the education of a properly equipped physician. The period of four years is deemed sufficient at present if devoted entirely to strictly medical subjects; otherwise it is not. Without attempting to enter into a discussion involving the advantages of a strictly scientific or so-called academic course in arts, philosophy and literature, the president and trustees of Cornell University have decided to adopt the requirements advised by the faculty of the medical college for admission to the course leading to the degree of M.D. Therefore, in and after 1908 candidates for admission to the Cornell University Medical College must be:

"I. Graduates of approved colleges or scientific schools, or

"II. Seniors in good standing in Cornell University or in any other approved college or scientific school whose faculty will permit them to substitute the first year of a professional course for the fourth year in arts and science, and who will confer on them the bachelor's degree on the satisfactory completion of the first year of the course in the Cornell University Medical College; or

"III. Persons who, while not possessing a bachelor's degree, give evidence by examination that they have acquired an equivalent education and a training sufficient to enable them to profit by the instruction offered in the medical college.

"In and after 1909 all candidates for admission to the Cornell University Medical College must have at least such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work; and in and after 1910 all candidates for admission must possess a similar knowledge of biology.

"Although all 'approved colleges or scientific schools' offer courses in the natural sciences, they are not always obligatory, and it was felt to be unfair to a few possible students to demand these subjects the first year the new requirements are in operation.

"The trustees also felt that it was unfair to refuse the exceptional student of unusual abilities who could obtain independently an education equivalent to that implied by a degree from a college or scientific school and there will, therefore, be a committee appointed from the faculties of the different colleges in the university to determine the qualifications of such individuals who may apply for admission but without the requisite official certificates."

The Teaching of Psychology in Medical Schools.—Dr. A. T. Schofield, in an article abstracted in the *British Medical Journal*, Sept. 28, 1907, alluded to the necessity, if the goal of medical education is to be kept in view, for the teaching of psychology, a need which requires no proof, since recent advances have demonstrated the important part that mind plays in both etiology and therapeutics. He affirmed that in modern medical education the goal is constantly lost sight of in the great attention given to minute anatomy, laboratory and analytical work, etc. He suggested that time given to these subjects should be curtailed and in place of them should be given courses in psychology of the sound mind as a preliminary to studies of: 1, The interdependence and interaction of body and mind, and 2, the psychology (a) of the various classes of disease generally; (b) of etiology generally; (c) of therapeutics generally; (d) of the *vis medicatrix naturæ;* (e) of drugs; (f) of natural remedies; (g) of mental remedies; (h) of the patients, and (i) of the doctor. In a discussion of the subject it was agreed that a course in normal psychology should be a necessary preliminary to the study of mental diseases.

Reciprocity in Colorado Without Retaliation.—Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, writes that the Colorado license is now accepted by Connecticut, Indiana, Iowa, Kansas, Kentucky, Maine, Michigan, Missouri, Nebraska, Ohio, Tennessee, Texas, Utah and Wisconsin. Colorado does not believe it just to refuse to license a worthy physician simply to retaliate against a state which refuses to accept the Colorado license. Colorado will license without examination, therefore, any physician registered prior to 1900, whether by examination or otherwise, or any physician registered since 1900 by examination in any state, regardless of whether that state reciprocates or not; provided, that the physician presents satisfactory credentials of good moral character and of reputable practice.

Mississippi October Report.—Dr. J. F. Hunter, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 8-9, 1907. The number of subjects examined in was 8; total number of questions asked 64; percentage required to pass, 75. The total number of candidates examined was 113, of whom 86 passed, including 38 non-graduates, and 27 failed, including 10 non-graduates. The following colleges were represented:

PASSED. College.	Year Grad.	Total No. Exam'd.
Medical Coll. of Alabama	(1905)	1
Geo. Washington University	(1906)	1
Atlanta College of P. and S.	(1907)	1
Louisville Med. Coll.	(1. 1906); (2, 1907)	3
Hospital Coll. of Med., Louisville	(1906)	1
University of Louisville	(1907)	2
Tulane University of Louisiana	(1889); (1901); (1907)	3
Mississippi Med. Coll.	(1907)	10
Washington University, St. Louis	(1904)	1
Woman's Med. Coll., of Pennsylvania	(1907)	1
University of Nashville	(1907)	3
Meharry Med. Coll.	(1907)	3
University of Tennessee	(1893)	1
Memphis Hosp. Med. Coll.	(1888); (1899); (1901); (1902); (1904) (7, 1907)	12
College of P. and S., Memphis	(1907)	2
University of the South	(1906)	1
Gate City Med. Coll.	(1906); (1907)	2
FAILED.		
Denver and Gross Coll. of Med.	(1907)	1
Flint Med. Coll.	(1905); (1907)	2
Mississippi Med. Coll.	(1907)	2
University of Nashville	(1905); (1906); (2, 1907)	4
Meharry Med. Coll.	(1906); (5, 1907)	6
University of the South	(1906)	1
"Sulphorock Medical College"*	(1906)	1

* No such institution known. In 1898 there was a preparatory school of medicine at Sulpher Rock, Arkansas, known as the Medical Department of Sulpher Rock College. This, in 1902, was removed to Texarkana, Arkansas, and the name was changed to the Gate City Medical College, now located at Texarkana, Texas. Its diplomas are not recognized by the Texas State Board of Medical Examiners.

New Jersey October Report.—Dr. J. W. Bennett, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 15-16, 1907. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 28, of whom 20 passed and 8 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Howard University	(1907)	77, 79.1
University of Louisville	(1906)	77.8
Baltimore Med. Coll.	(1906) 75.1, 75.4; (1907)	83.6
Johns Hopkins Med. School	(1906) 79.5; (1907)	88.6
College of P. and S., Baltimore	(1906)	81.4
University of Maryland	(1904)	78.4
Cornell University	(1907)	88.4
College of P. and S., New York	(1869)	76.4
Woman's Med. Coll. of Pennsylvania	(1889) 75; (1906)	80.1
Jefferson Med. Coll.	(1907)	81.8
University of Pennsylvania	(1885) 81; (1905) 85.4; (1907) 80.2.	79.5
University of Vermont	(1907)	80.1
FAILED.		
Maryland Med. Coll.	(1907)	69.1
Baltimore Med. Coll.	(1907)	72, 73.7
Baltimore University	(1904)	68.8
University of Bologna, Italy	(1905)	73.2
University of Naples	(1906)	69.8, 70.2
University of Turin, Italy	(1905)	72.4

Nevada November Report.—Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 5-6, 1907. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. Five reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Denver and Gross Coll. of Med.	(1907)	81.6
Hahnemann Med. Coll., Chicago	(1906)	83
University of Michigan	(1902)	83.1
University Med. Coll., Kansas City	(1904)	83.8
College of P. and S., New York	(1883)	88.4

LICENSED THROUGH RECIPROCITY.	Year Grad.	Reciprocity with.
Medical School of Maine	(1881)	Maine
University of Minnesota	(1905)	Michigan
Jefferson Med. Coll.	(1869)	Kentucky
Laval University, Quebec	(1905)	Michigan
Undergraduate		Missouri

Medical Economics

Contract Practice.

On several occasions correspondents have asked whether or not the position of railroad surgeon comes under the head of contract practice—a question of such a general character as to make it impossible to answer it satisfactorily without discussing the entire subject. Contract practice is of such vital importance that it seems worth while to discuss the entire subject with special reference to the fundamental principles involved.

In one sense, all medical practice is contract practice, since the courts have held that when a physician assumes charge of a case there is a contract, implied if not expressed, between him and the patient (if of legal age, or, if the patient be an infant, between the physician and the parents or guardian). Legally speaking, a contract is simply an agreement to perform certain acts for a certain consideration. There is no reason why a physician should not enter into a contract with an individual, firm or corporation the same as any other citizen so long as he does not infringe on the rights of any one else; the majority of cases of so-called contract practice, however, do so infringe, and are therefore objectionable.

Admitting that all forms of medical practice are contract practice and that there is no reason why a physician may not enter into a contract as may any other individual, what are the particular forms of contract practice in which there is an expressed contract rather than an implied one? For convenience, we may classify such contracts under three heads:

1. Contracts entered into between a physician and an individual for purely personal purposes, such as the employment of a physician by a wealthy invalid traveling for his health and desiring the entire services of the physician. In such a case, the relations between the physician and patient would be exactly the same as would obtain between any physician and patient—entirely a personal matter. The physician would presumably charge what he considered his services worth. The rights of no one else would be in any way invaded.

2. Contracts between a physician, on the one hand, and corporations or business organizations of any kind on the other hand, such as contracts with railroads, mining companies, large manufacturing companies. The object of such a contract is not benevolent or philanthropic, but is purely an interested one on the part of the firm or corporation, in that experience has shown that it is necessary for the company, in order to protect its interests and to prevent, or to successfully defend, unjust suits for damages brought by employés, to have a competent physician and surgeon in the employ of the company who can examine all employés injured in the discharge of their duties. In some cases, there is a mixed motive, and the action of the company is partly benevolent and partly coöperative and socialistic. An illustration of this is found in the benefit organizations of some railroad companies, in which the employés are given medical attendance and hospital care for diseases and injuries other than those contracted or sustained in the service of the company. The economic justification for this is found in tne fact that it is to the interest of the company to keep its employés in good health. The animating motive, however, which has led industrial organizations and large corporations to employ surgeons and establish hospitals has been, primarily, self-protection. It should also be noted that, under present economic conditions, such self-protection is an economic necessity to the success of any large business or one employing large numbers of men. This phase of the question will be discussed more fully later on.

3. The third form of contract practice is that in which a contract is entered into between the physician and an organization, made up of voluntary members, not established for any economic or commercial enterprise, but purely for social or fraternal purposes. Under this heading come all fraternal orders, lodges, benevolent associations, etc., which have been recently organized in such large numbers. Possessing generally some peculiar feature, such as fraternal life insurance, weekly sick benefit, etc., there has been grafted on to this plan, as an additional drawing card, the plan of furnishing medical care to members and their families at a purely nominal price. A lodge or society having two or three hundred members will levy a sick benefit of $2 per year on each member, and with this amount will employ a physician under a contract which requires him to furnish medical attendance, and in some cases medicine, to members alone or to members and their families, whenever he is called on to do so. This form of contract practice is what is known as lodge practice or club practice, and is a development, in this country, of the last fifteen or twenty years.

4. A fourth form of contract practice, and the lowest of all, is found in the burial and aid associations, which are really industrial insurance companies, with free medical attendance as an added inducement.

It will be found that practically every form of contract practice is included under one of the four headings. Let us now endeavor to ascertain what, if anything, is objectionable, about any of them, and if so, why and on what grounds such methods of practice should be condemned.

As to the first form, we are unable to see how a contract, whether written or verbal, between a physician and a single individual for certain professional services for a certain amount, differs except in degree from the agreement expressed or implied between a physician and any of his other patients.

The distinct feature about the second form of contract practice described, and that which differentiates it from the third form is that in the case of railroads, mining and lumber corporations, large manufacturing concerns, etc., proper care of employés injured in the performance of their duties is an economic necessity for the successful conduct of the business, and is one which has grown up through appreciation of this necessity. Surgeons are not employed by railroad companies, for instance, for the sake of the individual employés, but purely because experience has shown company surgeons to be necessary. Another reason is that large corporations are frequently the object of suits brought by employés for damages sustained through injuries. Experience has shown that it is necessary for a company to have a competent physician to represent it, and to make an examination and to report at the time of the injury in order that the company may have a record of the injury. If railroad companies, both steam and electric, and large manufacturing concerns, etc., did not take such precautions they would suffer great loss and perhaps even be wiped out of existence by damage suits in the course of a few years. Such protection is an economic necessity.

In the case of mining and lumber companies, an additional factor must be considered. Many mines, large lumber camps and saw mills are located at isolated points. Their location is not a matter of choice, but of necessity. A body of ore is discovered and a mine developed. Around this mine will be built a small village or town, in which the sole interest is the mine, the one thing which brings men to the place. Perhaps the number of employés or the number of inhabitants of the town is too small to justify a competent surgeon in locating there. As both company and the employés need competent medical service, an arrangement is frequently made by which the company pays a surgeon a fixed amount, and, in most instances, deducts a pro rata amount from the wages of each of its employés. Aside from the reasons mentioned, the justification for this form of contract practice is found in the fact that the isolation of a mining or lumber camp practically removes it from the competitive conditions which obtain in more thickly settled and more accessible communities.

From the above considerations we may conclude that contract practice is not only unobjectionable, but is justifiable, when there exists a plain economic necessity for it or when the circumstances under which it develops are such as to rule out the usual competitive conditions found elsewhere, provided the conditions, rate of compensation, etc., are equitable. It should be emphasized, however, that unless the company surgeon is the only available man and consequently, not in competition with another physician, there is no reason why the company should require the surgeon to furnish medical services to the families of the employés as part of his work for the company.

Taking up now the third form of contract practice, that in

which an agreement is entered into by a physician with a lodge, club, society or other organization, we note, first, that there is no economic excuse or justification for this sort of practice. If a man works for a certain railroad company, that company has a perfect right to say as one of the conditions of his employment that if he is injured he shall be examined, if not attended, by a medical representative of the company in order that the truth regarding his injury may be known to the employing corporation. There is no reason, however, why the fact that a man belongs to a certain lodge should entitle him to professional services at a few dollars a year, while his neighbor, living under exactly the same circumstances and drawing, perhaps, the same wages, but not belonging to the lodge, has to pay a much greater price for the same services. In other words, medical attendance is not an economic necessity for lodges or fraternal organizations, but is simply an added feature for the purpose of procuring members by offering them the inducement of medical services at a purely nominal figure. If the organization is a social and fraternal one, medical attendance is not necessary for its existence. If the organization has no other object than to furnish medical service, then the organization exists solely for the purpose of buying medical services at wholesale rates and selling them to its members at retail rates.

The objections to lodge practice are:

1. There is no reason for the existence of such a system. This has been discussed above and will not be further considered.

2. In making such a contract, a lodge asks the physician to give an indefinite amount of services for a fixed amount of compensation. The usual plan is that a physician is paid a certain amount per member per year for whatever attendance they may require. If the member or his family are not sick at all, then they pay for something they do not receive. If the member and his family have a great deal of sickness during the year, then they receive something for which they do not pay.

The plan practically amounts to a bet between the member and the doctor as to whether or not the member will be sick during the year. The member puts up $2 and the doctor puts up unlimited services. If the member is not sick, he loses, and if he is sick, the doctor loses.

The principles of fixed, limited compensation for indefinite, unlimited services can not be defended on any grounds. It might be argued that the same objection applies to railroad and company work, as outlined above. But the surgeon employed by a company is employed not for the purpose of rendering personal services to the individual patient, but is employed as the medical representative of the company. His relations are not those of a physician to an individual patient, but are those of a medical advisor to a company, for which he receives such compensation as may be agreed on.

3. The third objection to lodge practice is that it invariably introduces the element of ruinous competition among physicians. If one doctor agrees to do lodge practice for $2 per member per year, some cheaper man will soon agree to do the same work for $1.50 per year. In this way, the price of medical services is reduced to a ridiculously small amount. This, in turn, affects the quality of services rendered and thus works harm to the patient, the family and the entire community.

This objection will also hold against railroad or corporation work, where physicians are induced or allow themselves to underbid each other.

4. From the standpoint of both the patient and the physician, the greatest objection to lodge and club practice is that the physician can not afford to give good services for the amount he usually receives, while his compensation is not in any sense affected by the quality of his services. It therefore follows that the physician gives poor services and the patient receives poor services. This is detrimental to all parties concerned.

So far as the fourth form of contract practice, viz., sick benefit and burial societies, usually known under some high-sounding name, which issue policies to the poorer class of working people, providing them with medical services, medicine, etc., sometimes at as low a rate as 10 cents a week, this is the lowest form of contract practice, for which absolutely nothing can be said in defense. The promoters of these organizations are simply farming out the services of the physician, buying them wholesale at the lowest possible price and selling them at retail for all they can get and realizing the difference as their profit. The report of the Bureau of Associated Charities of Chicago, made through the Committee on the Abuse of Medical Charities of the Chicago Medical Society last spring, showed that in some cases the total compensation paid to physicians employed by these companies amounted to 24, 51 and 75 cents per month. Such contracts are degrading to the patient as well as to the physician, and are pauperizing to both. They should not be tolerated for a moment; there is no excuse for their existence. Patients not able to pay more than the sums mentioned can always be taken care of in public dispensaries and charitable institutions. Physicians who are willing or who are compelled to work for such prices are a menace to their patients and to public health on account of the quality of services which they must necessarily render. They should not be tolerated by the public, to say nothing of the profession.

In the light of the above, it becomes evident that a railroad surgeon is unquestionably a contract surgeon. In the case of railroad companies, there is an economic justification for the contracts which they enter into with physicians and surgeons, which has developed from the necessities of the case. So long as the contract between the railroad company and the individual surgeon does not infringe on the rights of others nor introduce the element of ruinous competition between physicians, there is no reason why any exception should be taken to such an arrangement.

We are free to say, however, that we consider that the prevalent custom among physicians in smaller towns on railroads of accepting a position as railroad surgeon for the sole compensation of an annual pass is belittling both to the individual surgeon and to the profession, and many a good man has been ruined thereby. It should be eliminated by the surgeons themselves. Good work, properly done, entitles one to proper compensation. The railroads must have competent surgeons for their own protection. They are perfectly willing to get as many men as possible on a transportation basis, since it is much cheaper for them, but if they were not able to obtain good men on this basis, they would prefer to pay cash rather than to accept services of poorer men or to do without any medical services. There is also no excuse for the purely nominal compensation in many cases. There is no reason why railroads should not pay a reasonable price for good services. They will do so, just as the insurance companies have done, rather than accept poor services, since they know that cheap men are the most expensive in the long run.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month.

THIRD WEEKLY MEETING.

Acute Rheumatism in Childhood.

(a) Insidious onset, anemia, lassitude, epistaxis, etc.
(b) Varied manifestations, chorea, arthritis, tonsillitis, carditis, skin lesions, pulmonary complications.
(c) Frequency of cardiac complications.
(d) Articular complications.
(e) Nervous symptoms.
(f) Nodules.
(g) Anemia.

Muscular Rheumatism.

Clinical Varieties.

(1) Lumbago, onset, pain, temperature, pathology.
(2) Pleurodynia. Muscles involved, pain, diagnosis.
(3) Torticollis. Occurrence, pathology, pain, diagnosis.
(4) Myalgias, abdominal, dorsal, cephalic, etc.

Treatment: Relief of pain, analgesics, morphin. Electricity. Local applications. Cupping. Plasters. "Electric belts" and other fake remedies in rheumatism.

Chronic Articular Rheumatism.

Pathology: Synovial membranes, capsule, ligaments, cartilages, tendon sheaths, contractions, deformity, muscular atrophy.

Symptoms: Joints involved, swelling, pain tenderness, physical signs. General condition. Cardiac complications.

Treatment: Prophylactic—Change of climate and occupation. Hydrotherapy.

Internal — Iodin, physiologic and therapeutic action. Guaiacum, therapeutic action.

Society Proceedings

COMING MEETINGS.

Southern Surgical and Gyn. Assn., New Orleans, Dec. 17-19.

American Association of Anatomists, Chicago, Dec. 26-27.
Western Surgical and Gyn. Assn., St. Louis, Mo., Dec. 30-31.

TRI-STATE MEDICAL ASSOCIATION (MISSISSIPPI, ARKANSAS AND TENNESSEE).

Twenty-fourth Annual Meeting, held at Memphis, Tenn., November 19-21, 1907.

The President DR. F. J. RUNYON, Clarksville, Tenn., in the Chair.

Officers Elected.

The following officers were elected: President, Dr. E. J. Johnson, Yazoo City, Miss.; vice-presidents, Dr. R. E. Howard, Durand, Miss.; Dr. Charles M. Lutterloh, Jonesboro, Ark., and Dr. Herman Hawkins, Jackson, Tenn.; secretary, Dr. Richmond McKinney, Memphis; treasurer, Dr. Marcus Haase, Memphis.

The place of the next meeting will be Memphis.

A Plea for the Administration of Less Calomel.

DR. A. J. NEWMAN, Bowling Green, Miss., said that there is more calomel prescribed than is necessary, and that this drug, when given in excessive doses, acts detrimentally on the system. In the South, where malaria is so prevalent, calomel and quinin have been the two-edged sword with which the mosquito-borne enemy has been so long fought. Dr. Newman does not prescribe more than 1/10 grain doses for the dry, sandpaper tongue of typhoid fever; and ½ grain doses, combined with santonin, for lumbricoides in children. There are other medicines, he said, which, if combined with small or moderate doses of calomel, will give better results than will large doses of calomel alone.

Acute Otitis Media.

DR. J. F. HILL, Memphis, Tenn., said that when he sees a case of earache early enough, say in the first few hours, he drops four or five drops of a 4 per cent. solution of cocain into the ear, repeating it in half an hour, if necessary. If the patient is a child, there is usually perfect relief in most cases after from one to three applications. The relief afforded by cocain is not, in his judgment, due to its local anesthetic effect, but to its physiologic effect, which is to drive out blood and to dilate orifices; hence, he thinks, that enough cocain seeps through the drum membrane and passes down the Eustachian tube to dilate it and allow the escape of the pent-up air, which gives almost immediate relief. If this fails, he uses the Politzer bag and inflates through the nose. He first clears out the nose with a spray; then takes equal parts of chloroform and spirits of camphor, using from two to six drops in the nose-piece of the Politzer bag, and inflates the middle ear through the nose and Eustachian tube. This vapor passes through the tube, dilating it and allowing the escape of the gas, and, at the same time that which remains in the drum is purified, thus relieving the earache.

DISCUSSION.

DR. E. H. MARTIN, Hot Springs, Ark., said the explanation of the essayist as to the relief afforded by cocain was contrary to anatomic facts. While cocain will dilate the pupil of the eye, there is no reason to believe that it will dilate any orifice having a sphincter muscle.

DR. J. L. ALLEN, Brownsville Tenn., referred to tubotympanic catarrh, and said where it exists alone there is a closure of the Eustachian tube, unattended by pain, but simply fulness. Even in children, where the Eustachian tube is closed, there is no pain, but where it affects the middle ear we have a tubotympanic catarrh, and we may have an acute otitis media. Tubotympanic catarrh may exist without suppuration, and it may pass off in a few hours without treatment. On the other hand, it may develop into an acute otitis media. One can differentiate between the two conditions by means of the otoscope. In a simple tubal affection there is very little change in the drum cavity.

Remedial Value of Ovariotomy in Profound Neurosis.

DR. J. W. BARKSDALE, Vaiden, Miss., stated that the circumstances under which he would feel justified in operating are: 1. In all cases coming on with the advent of puberty, when of a violent nature, and indicative of speedy insanity, where other measures failed to afford relief promptly. 2. In all cases where disease of the uterine appendages can be established, whether or not associated at the beginning with the onset of neuroses. 3. In all cases of women approaching the menopause, where a prolongation of this phase of menstrual life seems to be unduly hurtful in its influence. 4. In all cases between puberty and the menopause, where no lesion is discoverable either in the ovaries or other organs, and which have for a long time resisted all treatment. The author mentioned one patient with hystero-epilepsy, which had existed for eight years, who was relieved by the removal of both ovaries and the appendix.

DISCUSSION.

DR. J. A. CRISLER, Memphis, has done ovariotomy three times for the relief of nervous symptoms. Only one of the operations was attended with success.

DR. M. O. SHIVERS, Greenville, Miss., doubts very much, where there are no organic conditions, whether any of these patients receive permanent benefit from any operation. In cases of toxic insanity, he believes it is necessary to remove the uterus as well as the ovaries, on the basis that these cases are due, in a measure, to the absorption of toxins.

DR. B. F. MCNEIL, Belzona, Miss., reported the case of a negress relieved of epileptiform seizures by ovariotomy.

DR. J. L. ALLEN, Brownsville Tenn., recalled a case of intense nervous trouble, which was relieved after ventrofixation for retroflexion of the uterus and the removal of a cystic ovary.

DR. E. H. MARTIN, mentioned the work of Franklin H. Martin, who, he said, has secured excellent results in these cases by transplanting the ovaries of healthy women into women whose ovaries have been removed.

DR. S. T. RUCKER, Memphis, does not favor operating for a psychosis unless there are organic complications. He thinks that if many of the cases in which ovariotomy has been performed are followed up, it will be found that the relief afforded is only temporary.

President's Address.

The address of President Runyon was a scholarly plea for reason over sentiment in the crusade against disease and error. It was the business of physicians to teach rather than to cure, for in teaching lies prevention, the chief aim and object of the great science of medicine, and the science of medicine is the science of humanity.

Quarantinable Diseases.

DR. EUGENE WASDIN, Memphis, mentioned as quarantinable diseases Asiatic cholera, plague, yellow fever, smallpox, Malta fever, dengue and tuberculosis. Against these the older methods of quarantine were enforced with more or less success for many years, but until our special knowledge was developed, success was not at all permanent. With the discovery of the influence

of certain pathogenic bacteria in the causation of these quarantinable diseases there appeared at once the principles on which the quarantine methods should be based, and a new era of protective medicine was born. Not until this occurred was quarantine dignified and rational.

Relation of the State to the Tuberculous.

DR. LOUIS LEROY, Nashville, said that the State Board of Health has for a number of years attempted to get the various governors and legislatures to assist in looking after the tuberculous patients in the state's prison. Ninety per cent. of the prisoners who have died in Tennessee prisons have died of tuberculosis, and it is a fact that a large majority of them who have been imprisoned for periods of more than four years have contracted the disease in prison. This year, through the aid of the present governor of Tennessee, M. R. Patterson, means have been provided for the erection in the state penitentiary of a hospital for the tuberculous, and further arrangements are now being made so that the tuberculosis prisoners should be allowed to work in the open on farms, thereby allowing them to spend the most of their time outdoors and having the severity of their labors decreased in accordance with their physical condition. This will take them from the closeness of the crowded shops and factories, where now they are forced to work, elbow to elbow, ten or twelve hours a day, and are then driven back to close, infected cells. As soon as the building is completed the new plan will be in operation. The system will also be worked in the Brushy Mountain prison. The patients will be taken from the mines the moment they are found to be infected with the disease and lodged in the tuberculosis hospital, where they will be given an opportunity to recover. It has been a policy of some of the past governors the moment a prisoner was suspected of having tuberculosis to pardon him out. This system was very wrong, for the reason that the tuberculous patient was then thrust on society.

Therapeutic Fallacies.

DR. WILLIAM KRAUSS, Memphis, said that if one accepts Eddyism it overthrows the whole structure of preventive medicine, for there is no provision for the diagnosis of smallpox, yellow fever, or other preventable diseases. It means a return to the era of destructive, devastating epidemics, with all of their attendant horrors. But, says the Eddyite, disease is contracted through fear, and fear is sin. Reduced to common sense, the therapeutic result achieved by Eddyite treatment dwindles down to influence of mind over matter, even though that influence is in the form of religion.

Prostatectomy for the Relief of Bladder Symptoms in Old Men.

DR. E. M. HOLDEN, Memphis, has operated mainly through the perineum because the preliminary examinations of his patients convinced him that they could be operated on more safely in that way. The transvesical route was chosen when he found prostates which seemed more readily approachable from above. Age, of itself he said, is no argument against operation, but conditions which often accompany and sometimes precede old age may increase the risk beyond the patient's wish to face. Older men are less likely to stand the shock and loss of blood in the operation, and the younger men stand sepsis, uremic complications, and confinement less well than others. The suprapubic operation has the great advantage that by touch the enlarged prostate can best be seen and felt. It admits of the operation being done with great precision and completeness. On the other hand, the perineal route gives much the best drainage and is best suited for the removal of suburethral growths.

DR. E. J. JOHNSON, Yazoo City, Miss., advocates the perineal route for prostatectomy, because it affords direct drainage, and, as there is a septic condition to begin with, drainage is very essential.

Antitetanic Serum Treatment of Tetanus.

DR. G. R. LIVERMORE, Memphis, has seen seven cases of tetanus, four chronic, and three acute cases. Three of the chronic cases occurred in his own practice, and recovered under the administration of antitetanic serum. The other chronic case he saw when a medical student, and he believed this patient would have recovered if they could have secured sufficient antitetanic serum. While he does not consider antitetanic serum a cure-all, he believes it is the best remedy we now have, and, when given early, frequently, and in large doses, it will be the means of saving many lives.

DR. JAMES S. RAWLINS, Danceyville, Tenn., reported two cases of tetanus in which he used antitetanic serum. Only one patient recovered.

DR. O. S. MCCOWN, Memphis, said that antitetanic serum is a prophylactic, and should be used as a routine practice in all Fourth of July wounds.

DR. W. B. ROGERS, Memphis, has never seen a case of acute tetanus recover. He recalled six cases of chronic tetanus that recovered without antitoxin, and almost without any treatment, except medium doses of chloral.

DR. W. A. WALKER, Trenton, Tenn., mentioned three cases of tetanus that had been treated by Dr. Happel, of Trenton, with calabar bean, and all three patient recovered.

DR. L. P. BARBOUR, spoke of the great work that had been done by THE JOURNAL of the American Medical Association in gathering statistics from all over the country in regard to Fourth of July injuries, and of cases of tetanus resulting therefrom. He recommended that those who desired information on this subject read the articles that have appeared in the JOURNAL from time to time.

Referred Pain and Its Significance.

DR. W. J. WADLINGTON, Memphis, said that referred pain due to mechanical irritation may be caused by pressure, as from tumors, callosities, adhesions, exostoses, and all characters of malignant and non-malignant growths which are so situated as to press on sensory nerves. He mentioned coxalgia due to pressure on the obturator nerve, the pain being referred to the knee. In sciatica, due to intra- or extrapelvic irritation, pain may be referred to the leg and foot. Intrapelvic tumors, pressing on the pelvic plexus, may cause pain along the inner and lower aspect of the thigh and leg. Pressure due to a callus or growths along the ulnar nerve produces pain in the fingers. A tumor at the base of the brain pressing on the fibers supplying the dura may produce constant headache. The pressure of an aneurism on the brachial plexuses produces pain in the arm.

The physician, he said, is frequently called on to relieve a persistent backache, which promptly disappears when an impacted colon is emptied. In uterine irritation sensation may be referred to the breast. In ovarian lesions pain may be referred to the head. Disease or a foreign body in the nasopharynx may cause frontal headaches or pain between the eyes. Diseases of the vertebræ may refer pain to the side of the chest, as intercostal neuralgia. In angina pectoris pain radiates down the left arm.

Pain in the axilla and lightning pains in the lower extremities are characteristic of locomotor ataxia. The localized pain and tenderness of appendicitis are well known. A pain in the pit of the stomach may be the premonitory symptom of appendicitis. The pain of appendicitis may be referred along the right thigh, or it may resemble incipient disease of the sacroiliac symphysis. In the various lesions and disturbances of the liver, pain may be referred to the left shoulder. Referred pains due to chemical and toxic irritation are numerous and varied.

Vaginal Incision Versus Abdominal Section in Pelvic Abscess.

DR. M. O. SHIVERS, Greenville, Miss., insists on a wide application of the vaginal method of attack for all pathologic conditions in the female pelvis, especially pelvic abscess. He has treated three hundred cases of pelvic abscess by vaginal incision. The advantages of vaginal incision over abdominal section are many. The distance from vulva to cul-de-sac is less than from abdominal wall to cul-de-sac. There are also fewer structures to pass through. No ligatures are necessary. The abscess is not masked by the viscera, which are always in the way in an abdominal section. In separating adhesions the work proceeds smoothly, and if the abscess ruptures, there is no danger of general infection, as is often the case in an abdominal section. Intestinal adhesions are not interfered with.

The treatment is not ideal. There is no ideal treatment. He believes that it offers greater chances for complete recovery and less untoward symptoms than any other method now employed.

DISCUSSION.

DR. O. S. MCCOWN, said that cases of ovarian cyst, which become septic, and cases of appendicitis in which the appendix dips down into the pelvis, can be treated by suprapubic incision, and, if necessary, through and through drainage, with vaginal drainage also. An accumulation of pus in any part of the body should be drained.

DR. J. A. CRISLER, favored abdominal incision in preference to vaginal incision and drainage for pelvic abscesses.

DR. W. D. HAGGARD, pointed out the indications for the vaginal operation. No one, he said, would think of opening large abscesses from the abdomen. These abscesses are low in the pelvis, and can be incised through the vagina more safely and more quickly than by attacking them through the abdomen.

Treatment of Cancer of the Rectum.

DR. A. B. COOKE, Memphis, said that any operative procedure which does not contemplate the removal of the entire growth is nothing more than a palliative measure, and should be so recognized. Of operative procedures proctotomy and partial removal of the growth by currette or sharp spoon serve, occasionally, a useful purpose when obstruction is threatened. But the tendency of malignant growths to take on renewed activity when subjected to traumatism, surgical or otherwise, must be remembered in deciding on such measures. In selected cases colostomy possesses decided advantages over other methods of treatment. Being a purely palliative procedure, this statement applies to these cases which will not permit of total extirpation. The radical treatment of cancer of the rectum consists in extirpating the entire growth, without regard to the extent or the importance of the parts involved.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, Oct. 23, 1907.

The President, DR. JAMES B. WALKER, in the Chair.

Etiology and Treatment of Thrombosis Based on Studies of Coagulation Time of Blood.

DR. G. MORTON ILLMAN and DR. HARRY A. DUNCAN presented this paper, reviewing briefly many of the theories advanced regarding the etiology of thrombosis. They believe that the primary cause of the condition is an abnormally quick coagulation time of the blood which undoubtedly precedes the thrombosis and that the quick coagulation of the blood is caused by the excessive absorption of tissue juices, which absorption is stimulated in surgical conditions by the hemorrhage which may occur before, during or after operation. Their conclusion, from several hundred observations with the coagulometer, is that thrombosis in both medical and surgical cases is a condition that can be positively prevented if the proper observations are made and treatment carried out.

DISCUSSION.

DR. HOBART A. HARE inquired whether any control experiments had been made on persons not receiving the citric acid to determine the variations which take place under natural conditions; and whether the conclusions of the authors that the body juices are responsible for coagulation are reached by exclusion or because of some definite experiments proving that point.

DR. F. P. HENRY referred to the fact that the left common iliac vein is crossed and presumably slightly compressed by the right common iliac artery as a mechanical cause often assigned to the very great prevalence of thrombosis on the left lower extremity.

DR. L. JAY HAMMOND asked what effect, if any etherization has on the clotting of the blood.

DR. ILLMAN referred to their conclusion that there is a normal clotting time of the blood just as there is a normal temperature and that the clotting time will vary as does the temperature. No experiments of the clotting time of the blood following etherization had been made.

Magnesium Sulphate in Four Cases of Tetanus.

DR. J. NORMAN HENRY in this paper said that of four cases treated by intraspinal injection of magnesium sulphate, but one recovered. All however were relieved of convulsions and were able to sleep for varying periods after each injection. Usually these periods of relief lasted at least twenty-four hours. Following the administration of the salt, in several instances, there were rather alarming symptoms of cerebral and respiratory depression. A cumulative action was noted in two cases.

DISCUSSION.

DR. HOBART A. HARE said it was universally conceded that in those cases in which symptoms develop a long time after the injury the condition was regarded as so-called chronic tetanus and that a much more favorable diagnosis should be given than in cases in which the tetanic symptoms developed a week or ten days after traumatism. He thought it possibly unwise to employ a 25 per cent. solution of magnesium sulphate because of the danger of absorption of the drug by the tissues to be affected. The tonus of the solution should be regarded in connection with the absorption. He inquired whether the relaxation following the injections was general or confined to the region in which the injections were made.

DR. HENRY replied that the relaxation was noted in the jaws, head and neck as much as in the lower muscles.

The Anesthesia Peril in American Hospitals.

DR. JOHN B. ROBERTS presented the above paper, stating that he had years ago read a paper on the subject of ether deaths before the society and had in the years of surgical practice since that time seen no reason to change his opinion that there were no powerful drugs given so carelessly and recklessly and by such incompetent hands as are general anesthetics. He expressed surprise that deaths from ether and chloroform were not more frequent than they are and suggested that the man who administers the anesthetic should be the most skilful of the staff of assistants utilized by the surgeon at operations. While some American hospitals, particularly the smaller ones and those of a semi-private character, have experts to give the anesthetic, it is not, in his belief, the common practice in American hospitals. A great deal too much ether or chloroform is often given and general anesthesia is frequently resorted to when unnecessary. Septic infection was formerly the trial of the surgical hospital ward. Improvement in technic and asepsis have lessened the dangers of operative surgery, but the same progress has not been made in care and discrimination exercised in the use of anesthetic agents. Inexperienced administrators and carelessness in giving the powerful drugs used for this purpose are causes of death oftener than is perhaps appreciated. Fatal issues are probably not infrequently attributed to shock when they really are the results of improper use of ether or chloroform. The damage is often one that shows no marked symptoms at the time of operation but develops later from the poisonous influence of the anesthetic on the organism. The solution of the difficulty is to encourage the development of anesthetic specialists and to insist on instruction in medical schools and hospitals of the new resident physicians in the science of administering anesthetics. It is probable that a considerable number of young men would devote themselves to this specialty if assured a proper fee, which the patient should pay in addition to the fee given the operator. It was suggested that the anesthetist be paid one-tenth the amount paid to the surgeon for the actual operation.

DISCUSSION.

DR. THEOBALD A. ERCK knows of but one hospital in the city that employs a salaried anesthetist. The surgeons who operate in the hospital see that he gets a fee rendered by the hospital authorities for every private patient who enters the hospital.

DR. HOBART A. HARE spoke of the diminished danger in the present administration of ether or chloroform by the drop method. He thought the chief danger lay in what might be called the secondary stage, the period following etherization.

DR. ROBERTS agreed with Dr. Hare to a certain extent that there is perhaps less danger now because of better teaching

in the colleges, but emphasized his point that it is not altogether that a man is not careful, but the fact that he does not know as much as he ought to know about dosage and about the possibilities af the results. Admitting that it is difficult to prove, he is convinced that a good many patients die in institutions from ether giving rise to secondary results, or from ether causing death on the operating table or shortly afterwards.

The Gordon Reflex, with Special Reference to a Case of Spinal Trauma.

DR. GEORGE E. PRICE in this paper dealt with the history, technic, discussion of the cause and clinical value of the Gordon "paradoxic" reflex, with report of a case of spinal trauma (probably minute hemorrhages into the cord) in which for 48 hours the Gordon reflex was the only sign of motor disturbance with the exception of exaggerated reflexes. Points emphasized were the importance of the reflex as a sign of irritation or lesion of the upper motor segment, and especially its value as an early or delicate sign of such condition. The Gordon reflex was first demonstrated before the Philadelphia Neurological Society in 1904 and consists in extension of the great toe on pressure or irritation of the deeper flexor muscles of the calf of the leg.

NINTH COUNCILOR DISTRICT, INDIANA STATE MEDICAL ASSOCIATION.

Meeting held at Lebanon, Ind., Nov. 21, 1907.

Officers Elected.

The House of Delegates met at the Public Library and elected the following officers for the ensuing year: President, Dr. Charles Chittick, Frankfort; vice-presidents, Drs. W. H. Schultz, Lebanon, and H. H. Thompson, Noblesville; secretary, Dr. George F. Keiper, Lafayette; treasurer, Dr. Edgar Cox, Kokomo.

Resolutions on Nostrums.

The following resolutions were adopted unanimously:

WHEREAS, Through the cupidity and avarice of drug manufacturers, many nostrums and so-called proprietary medicines have been put on the market and used by doctors in the treatment of sick people, and

WHEREAS, The majority of the physicians of the United States, acting in their organized capacity through the American Medical Association, which is composed of the county and state medical societies of the country, have established a Council on Pharmacy and Chemistry, whose sole purpose is to examine new preparations, not in the United States Pharmacopeia or National Formulary for their chemical and pharmaceutical purity; and

WHEREAS, The said Council has examined many hundred of such preparations and have found the large majority of them to be fraudulent or worthless or both and has published a list of those which it has approved, now, therefore, be it

Resolved, That the Ninth Councilor District of the Indiana State Medical Association and the medical profession in sympathy with it in session assembled, hereby expresses its confidence in the Council on Pharmacy and Chemistry of the American Medical Association and in order to make its work of force and effect among the physicians of this district and their sick and afflicted patrons, be it further,

Resolved, That in so far as may be practicable, we and each of us will confine our prescription writing and the use of drugs to those preparations contained in the United States Pharmacopeia and National Formulary, which has been established as the law of the land by the national Pure Food and Drugs Act, and that we will not use, or permit to be used, any proprietary preparation until it has received the approval of the Council on Pharmacy and Chemistry of the American Medical Association; and be it further

Resolved, That we condemn the acceptance of advertisements of fraudulent nostrums and proprietaries by the medical and religious press and that we, and each of us, decline to receive any copy of any medical or drug journal, whether owned and controlled by a medical society, laymen, druggists or doctors, which advertises such preparation, after Jan. 1, 1908.

We the undersigned and each of us, hereby pledge ourselves to abide by the above resolutions and to use no medical preparations which are not contained in the official United States Pharmacopeia or National Formulary or in the list of "New and Non-Official Remedies" approved by the Council on Pharmacy and Chemistry of the American Medical Association, and that we will subscribe for no medical or religious journal, nor will we receive such journal from the postoffice, which advertises fraudulent or worthless nostrums and proprietary medicines, after Jan. 1, 1908.

That these resolutions be forwarded to the *Journal of the Indiana State Medical Association* and THE JOURNAL of the American Medical Association in order to show the profession of the country that the physicians of the Ninth Councilor District of the Indiana State Medical Association propose to free themselves of this curse and danger to themselves and their patients.

Papers Read.

Papers were read by Prof. Severance Burrage of Purdue University, on "The Opsonic Index;" Dr. Paul Barcus, Crawfordsville, on "Oxygen in General Anesthesia;" Dr. George Rowland, Covington, on "Management of Acute Delirium Tremens;" Dr. W. J. Fernald, Frankfort, on "Medicine and Superstition;" Dr. S. M. Cotton, Goldsmith, on "Laboratory Versus Bedside Diagnosis."

The association will be entertained next October by the Montgomery County Medical Association at Crawfordsville.

IDAHO STATE MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Boise, Oct. 3-4, 1907.

(Concluded from page 1948.)

Prostate Operation.

DR. E. F. ROOT, Salt Lake City, said that the operation as done to-day is modern and a fad that is carried to the extreme; too often patients are operated on regardless of pathology, etiology and prognosis. He claimed that the prostate is no exception to the general immutable law governing the animal economy. It is rudimentary at birth, springs into active life at puberty, fulfills its mission as an essential part of the sexual life, and retrogrades and becomes sclerosed as old age creeps on. He claimed that it is natural to expect at the end of a long life, not only impaired function of the gland itself, but an interference to some extent with the functions of other organs more or less dependent on it. In simple hypertrophy, he advocates emptying the bladder with the catheter when necessary, in all but extreme cases, and protested that the old man should wear his prostate and care for it until it was a menace to life itself. He urged that no operation be attempted that is not intended to save life, and that no extirpation should be undertaken by any one who had not had sufficient surgical experience to do the operation deftly and with as little traumatism as possible.

DISCUSSION.

DR. G. S. PETERKIN, Seattle, said that the etiology of enlarged prostate is still in a stage of study; we do not know yet what causes the hypertrophy. When the prostate is enlarged there is back pressure and residual urine, and with this condition there is nearly always infection of the bladder. Operation is required for relief of infection, otherwise it will travel upward to the kidneys. The route of operation is immaterial and depends on the operator, though perineal route is one of choice as it gives better drainage. Four years is the average catheter life of the prostate patient; operation will give him a longer life. Of course the operator must be sure of his technic. He always enmploys cystoscope in making diagnosis and thinks it a mistake to depend on the sound or finger alone.

DR. JOSEPH BLOODGOOD, Baltimore, discussed the history of prostatectomy. He favors operation in preference to catheter life, and prefers the perineal route. The results of operation have been splendid. He thinks that the cystoscope should be made use of in making diagnoses; he has never used the sound for this purpose.

DR. E. F. ROOT, Salt Lake City, said that he intended his paper as a simple protest against indiscriminate removal of the prostate, and cited a case in which great injury was done to the patient. Operation should be done only to save life and not just for the relief of a symptom, and the indications in each case should govern the surgical methods and the route selected.

Measurements of the Coagulation Time of the Blood and Its Application.

DR. FRANK HINMAN, Spokane, Wash., made an interesting address on this subject and described the various methods and apparatus used for measuring the coagulation time. His experience had shown that in jaundice, typhoid fever, and hemophilia the coagulation time is more or less markedly increased. He has also found that calcium therapy gives a means of decreasing the coagulation time, the lactate of calcium, in his opinion, being the most efficacious salt to use. This drug, given by mouth in the form of a syrup, or by rectum or in-

fusion in salt solution, 10 grains every three hours, gave best results. The chlorid of calcium is less effective and the citrate often increases the time. He has found that the effects of lime salts will wear off after a time, and some claim that after long use it may even have a tendency to increase coagulation time.

DISCUSSION.

DR. F. H. BRANDT, Boise, said that he has used some of these methods in his hospital experience, but his experience had not been sufficient to enable him to form any definite opinion as to its value.

DR. JOSEPH BLOODGOOD, Baltimore, said that hemorrhage is greater and more difficult to control in cases of jaundice from malignant disease than in jaundice due to stone, unless the obstruction has existed six months or more. Calcium lactate should not be given indiscriminately by set rule, but watch the coagulation time and operate when it is the lowest. Milk given by rectum seems to increase the coagulation time.

DR. L. P. MCCALLA, Boise, has found it to be an almost universal practice in Europe to study the coagulation time of patients before operation, and, when indicated, precede operation with a course of lime or gelatin to shorten the coagulation time.

Postgraduate Work at Home and Abroad.

DR. R. L. NOURSE, Boise, reviewed in an interesting manner his recent experiences in preparing himself for special work in diseases of the eye, ear, nose and throat. He spent four months visiting the clinics of New York City and Philadelphia, and then sailed for Europe, stopping three months in Berlin, six months in Vienna, four months in London, and for shorter periods in Freiburg, Zurich, Munich, Paris, etc.

Relation Between Diagnosis and Treatment of Tumors.

DR. JOSEPH BLOODGOOD, Baltimore, spoke of the value of studying pathology on the living subject and the advantage the surgeon thus possesses over the pathologist. The surgeon's dealings are more vital for he deals with life, while the pathologist has to do with the dead only. The day will soon be past when the surgeon will depend on the report from the laboratory before diagnosing a malignant condition. The surgeon must learn the naked-eye appearance of malignant growths so that he can recognize these tumors with the unaided eye; he often can not wait for the microscopic findings. For example, in disease of a bone, the diagnosis must be made when the diseased tissues are exposed by the knife. The surgeon must be able to say what changes have taken place in the tissues, the character of tissue presenting, and the condition of the bone. Frozen sections, prepared and examined quickly while the patient is on the table, are not always reliable. To get reliable information from a section, it must be carefully hardened over night and studied thoroughly. Ninety per cent. of cancers of the breast can be diagnosed in this way in time to make a complete removal and cure. This can be done with all surgical diseases. Of course diagnosis can often be made by examination, with the various means at our disposal, and then we should study sections of the tumor to prepare us for the one case in nine which is malignant and needs deep removal. It is gratifying to note that the public is being educated to the needs of recognizing the nature of these tumors, and it is now easier to get a patient to submit to necessary surgical treatment. It is time for the public to know that cancer is a local disease at first, and curable. People look to the surgeon to tell them of their danger, and every surgeon of to-day must be his own pathologist and make his own diagnosis. Dr. Bloodgood recently studied all the tumors of the breast removed during the last fifteen years at Johns Hopkins Hospital. There were 1,200 cases of cancer of the breast—most of them operated on three or more years ago—and it is unfortunate and pathetic to learn that in all cancers of the breast in which removal of the breast was done without dissecting out the glands the patients are now dead. On the other hand, when complete removal of breast and glands was done there were 90 per cent. of cures. We are justified in making an exploratory incision in suspicious cases, for the purposes of diagnosis, even though there may be a little danger to the patient; for the danger is far less than to delay too long in making a diagnosis. It is the duty of the profession to teach people that cancer is curable and that simple tumors may become malignant and produce death, and should be removed while simple; and they should be taught that the pigmented mole may develop into a sarcoma of most malignant and incurable type.

Work, Worry and Disposition as a Cause of Disease.

DR. R. L. GILLESPIE, Portland, discussed the double aspect of life—the healthy and the diseased—as seen by the psychologist. The restless pursuit of wealth and social position, the anxiety and hurry, the emotional strain and intellectual overwork, the unhygienic modes of living, excesses in excitement and excitants, together with disease, tend to fix on modern civilized man and woman an important mental state that is near the border line. He said our end in life should be happiness; to worry is to miss the purpose of our living. Worry begets fear and these two condemn many to real or imaginary disease. Worry is a disease peculiar to civilized man; its consequences are sleeplessness, alcoholism, drug addiction, hysteria, insanity and suicide. However, all worry is not morbid. A judicious worry under some circumstances is normal, natural and right, and we should distinguish between normal and morbid worry. Healthy brain activity is essential to life and justifies the aphorism that it is not work but worry that kills.

Other Papers.

The following papers were also read: "Diphtheria and Membranous Croup," Dr. J. J. Hamilton, Caldwell; "Dry Tracts and Facts in Neurology," Dr. Edwin Van Note, Boise.

Interesting cases were reported by Dr. E. B. McDaniel, Baker City, Ore.

Medicolegal

Passenger Leaving Train on Order of Health Officer Without Remedy Against Company.

The Supreme Court of Georgia holds, in Baldwin vs. Seaboard Air Line Railway Company, that a passenger on a railway train who had paid his fare to a given city, which was under quarantine regulations, and who, when near the end of his journey, left the train at a station on the railway line, in obedience to the order of a quarantine or health officer, who told him that he would not be allowed to ride on the train into the city, but must leave it at that station, has no cause of action against the railway company for a wrongful expulsion from its train, although the conducter pointed him out to the health officer, and, after knowledge of such officer's order to the passenger, did not interfere to prevent its execution.

The court says that a health officer who had authority to pass on the sufficiency of the plaintiff's health certificate to entitle him to enter the city, had also, by necessary implication, authority to prevent him from entering such city, if the certificate, under the health regulations in force, was not such as to entitle him to do so. The conductor was not bound to contest with the health officer the propriety or legality of the exercise of his power and authority in the particular instance; as the sufficiency of the health certificate was a question for the health officer, and not for the conductor.

The conductor had a perfect right to point out to the health officer the passengers on the train who had boarded it at a given city or locality. For instance, if the health officer asked the conductor to indicate to him the passengers who had held tickets from a certain point, and the conductor did so, he would not thereby render the railroad company responsible for the subsequent official conduct of such officer to such passengers, or any of them. He would merely be giving information to which the health officer, as a matter of public policy, was entitled.

Efficiency of Alleged Abortifacient Immaterial.

The Supreme Court of New York, Appellate Division, First Department, says that in the case of People vs. Spier the Medical Society of the County of New York complained, on information contained in certain affidavits, that the defendant had

violated section 318 of the New York Penal Code, which makes it a misdemeanor to sell, etc., any instrument or article, or any recipe, drug or medicine for the prevention of conception, or for causing unlawful abortion, or purporting to be for the prevention of conception, or for causing unlawful abortion, etc., or hold out representation that it can be used or applied, or any such description as will be calculated to lead another to so use or apply any such article, etc. The defendant was not on trial for having caused an abortion. He was not on trial for selling an article for the prevention of conception, or for causing unlawful abortion. He was on trial for selling an article purporting to be for causing unlawful abortion, and that was all that the people attempted to show. There was no dispute that the defendant did make a sale of certain pills and suppositories to the witnesses. No question of motive was at issue. It was not necessary to show any guilty intent. If the things sold were bread pills, and yet they were sold purporting to be for the unlawful purpose, the offense denounced by the statute would have been committed. Therefore what was in issue, in order to establish the crime, were the statements and representations made by the defendant to the purchaser at the time of the sale.

Requiring Vaccination and Certificate of Physician.

The Supreme Court of Arkansas holds, in the case of Auten vs. Board of Directors of Special School District of Little Rock, that it was the duty of the city council and of the board of health of the city as far as possible to protect the inhabitants of the city from malignant, contagious and infectious diseases, and the special duty of the school board to guard the pupils of the school against such dangers. It says that when it considered that a number of cases of smallpox were already in the city, and that strict precautions were necessary to prevent the spread of the disease, it does not think there could be any ground for the contention that the requirement that pupils should be vaccinated before entering the schools was unreasonable and unnecessary.

It is matter of common knowledge of which the court can take judicial notice that the great majority of medical writers and practitioners advocate vaccination as a safe and efficient means of protecting cities and thickly settled communities against the scourge of smallpox. It is due to this that in some of the thickly settled countries of Europe vaccination is made compulsory on all the inhabitants. While it is not compulsory in the United States, yet the government recognizes its efficacy by requiring alien immigrants to submit to it before entering the country; and in nearly every large city in the United States regulations are in force requiring all pupils to be vaccinated before admission to the public schools. These things show that a large portion of the civilized world regards vaccination with favor.

It is true that the majority may be mistaken in this, as they have been about other questions; but that can not alter the court's decision, for the question of whether the public health justified this regulation was a matter for the school board and the board of health and city authorities to decide. It was a matter left to their discretion. The responsibility and duty of deciding this matter having been placed on them, the courts have no right to interfere and control their discretion, unless it is clearly shown that the regulation was unreasonable and unnecessary. But it is clear that this had not been done. To repeat, the facts were that smallpox, a virulent contagous disease, being already in the city, the school board, in order to guard the pupils of the school against it, adopted this regulation. In doing so they acted under the orders of the board of health of the city, and in accordance with the advice of physicians who are supposed to know what was prudent and necessary under such circumstances, and the courts should not annul their decision.

But the petitioner in this case had already been vaccinated. He did not complain of that requirement, but of the fact that a certificate of a physician was required to show vaccination; but, if it was reasonable to require vaccination, it was reasonable to require some satisfactory evidence of that fact. As the question of whether a pupil had been sucessfully vaccinated was one requiring medical knowledge the board would, from the nature of the case, have to rely on the judgment of medical experts in deciding it. It would either have to employ a physician to examine each applicant, or to require the applicant to go to his own physician for examination and for a certificate. The board did employ a physician to examine those who were unable to pay for the services of a physician, and it was not unreasonable to require others to procure a certificate from a physician selected by them. Especially was this true when it was considered that this certificate was only required on the first entrance of the pupil to the schools. The course in the public schools requires several years to complete; but, as the court understands it, this certificate was required of pupils only when first entering the schools. This certainly involved no great hardship.

The contention that the board had no right to make the certificate of a physician conclusive evidence of vaccination was not pertinent for the reason that, if this certificate was made conclusive evidence, it was conclusive in favor of the pupil, and not against him. Under the regulation the pupil was not bound by the opinion of any particular physician. He had the whole city, or even state, to select from, and when he had procured a certificate of a reputable physician he certainly had no right to complain that the board made that conclusive evidence in his favor that he had complied with its regulation.

On the whole case, the court finds no reason to interfere with the action of the school board, and are of the opinion that the writ of mandamus was properly refused.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

November 30.

1 *Infantile Spastic Paralysis and Its Treatment. E. M. Little, London, Eng.
2 *Test of String Cutting Method for Impermeable Esophageal Strictures. R. Abbe, New York.
3 *Open-air Treatment of Pneumonia; 29 Years' Experience. S. Harnsberger, Catlette, Va.
4 Gastric Exfoliation as a Feature in Production of Acute Gastric Ulcer. A. Bassler, New York.
5 Diagnosis of Kidney Diseases with Reference to Significance of Slight Albuminuria. E. Ballenger, Atlanta, Ga.
6 Unilateral Third Nerve Paralysis. J. J. Kaiser, New York.

1. **Infantile Spastic Paralysis.**—According to Little, the use of this term is now generally restricted to those cases of congenital origin in which labor has been premature or difficult and in which both lower limbs are affected but not the upper. Cicatricial lesions the result of embolism or thrombosis or hemorrhage may be found in the cord, with secondary sclerotic changes, and the lesion in the brain is often an enlargement of the lateral ventricles at the expense of the cerebral substance. The most certain pathologic fact is the frequent existence of a lesion in, or of arrested development of, the pyramidal tracts, or of the parts of the encephalon directly connected with them. Marked atrophy of the limbs does not often occur. The spastic gait apppears when the lower limbs are affected. When the upper limb is affected the Z form of hand is produced. Cases are classed as hemiplegic, paraplegic or diplegic, hemiplegic being the most common. There is probably an irremediable defect in the brain, so that improvement, not cure, may be looked for. Physicians, especially neurologists, have usually discountenanced operation, but orthopedic surgeons generally agree in the great benefits to be obtained by surgical measures. Little quotes the views of many such and states that in his opinion treatment should be begun early, in the form of fixation in the corrected position by splints, gypsum bandages or instruments. When persisted in for six months or a year in a few cases spasm may diminish to an extent that renders operation unnecessary.

2. **String Cutting in Esophageal Stricture.**—Abbe makes a second report, after a test of fifteen years, of the method of "string cutting" introduced by him in the treatment of traumatic stricture of the esophagus. In such strictures there is a tendency for the portion of the esophagus above the stricture

to become bowl-shaped, so that it is often impossible to pass any instrument whatever through the stricture from above. It can always be penetrated, however, from below (in which direction it is funnel shaped), through an incision into the stomach. Originally two strings attached to a dilating bougie were passed by means of a filiform through the stricture and out of the mouth, drawing the tip of the bougie into close contact with the stricture. The strings were then pulled on with a sawing movement from the mouth, and it was found that the stricture quickly melted away before the string friction, until, with almost no bleeding, the largest bougie passed entirely from stomach to mouth. Treatment was continued at decreasing intervals for several months; since then the esophagus has been tested once a year and indicates no sign of recurrence. In a later case, owing to insufficient after-treatment, there was a tendency to recurrence, and to meet this Abbe devised a dilating metal guide carrying the string down to the face of the stricture and back again, so as to be workable from the patient's mouth. After etherization the instrument is pushed gently down the straightened esophagus until the probe-ending guide engages in the stricture and the metal shoulder bears hard on it. The loop of the string is then pulled back and forth in the tube. A perfect cure has resulted in this case also. The string cutting method, of course, is not applicable to strictures resulting from mediastinal tumors, aortic aneurism, malignant disease, or spasm.

3. **Pneumonia.**—Harnsberger has used the open-air treatment of pneumonia for twenty-nine years with successful results, and believes that by its means the modern death rate from this disease, so much greater than that of old time, can be greatly reduced. He excludes artificial heating, using in place of it hot applications, of which the best is the cotton jacket, hot water and turpentine, applied to the maximum of irritation, then gently lessened. Hygiene of the nose, throat and mouth is important. He discards alcohol under ordinary circumstances, but states that if used it should be given only in fractional doses at fractional intervals. Among drugs he finds capsicum, nux vomica or its alkaloid, and ammonium carbonate or chlorid most useful. Strophanthus, digitalis and nitroglycerin he disapproves of. For diet he recommends lean meat juice, blood, bone marrow and egg albumen, with pure grape juice, until convalescence is well under way.

Boston Medical and Surgical Journal.

November 28.

7 *Anterior Poliomyelitis in the Adult with Illustrative Cases. G. L. Walton, Boston.
8 *Diagnosis of Gastric Cancer. R. F. Chase, Boston.
9 Portable Traction and Retentive Apparatus for Fracture of and Operations on the Lower Extremity. R. Soutter, Boston.
10 Brace for Postural Curvature of the Spine. R. Soutter, Boston.
11 Case of Dissecting Aneurism with Rupture of the Aorta: Autopsy. W. E. Paul and W. A. Brooks, Boston.
12 Dystocia Due to Fibroids. Intrauterine Death of Fetus. Craniotomy. J. R. Torbert, Boston.

7. **Anterior Poliomyelitis in Adults.**—Walton states that acute or subacute poliomyelitis in young adults is not rare. The real seat of the infection is apt to be obscured by temporary symptoms pointing to the meninges and nerve sheaths. The implication of the meninges is probably independent, not an extension from the substance of the cord. The onset of paralysis is more retarded in adults than in infants, and the extension of paralysis from one group to the other is less immediate. No extension of paralysis is to be expected after fever has subsided. Prolonged rest of the affected muscles is desirable, as well as early orthopedic measures.

8. **Gastric Cancer.**—Chase asserts cancer of the stomach is much more common than many realize. The absence of any medical cure and the fact that the success of surgery depends on its employment in time indicate the necessity for early diagnosis. The ordinary medical means of diagnosis may be found in the history, particularly in regard to inflammation as to past ulcer, age and loss of weight. In patients with gastric stasis weight should always be taken after the stomach has been evacuated, as the contents of the stomach may weigh from one to several pounds. If the preceding examination gives the least ground for suspicion of cancer, chemical tests, Salomon's test, mechanical and other tests—e. g., aspiration of the stomach, inability to pass the stomach tube more than fifteen or sixteen inches, presence or absence of the deglutition sound, etc.—should be resorted to. It is quite as important to exclude cancer in its absence as to make a positive diagnosis when it is present. Those who suppose that a positive or negative diagnosis may be made on the strength of chemical examination of the gastric juice should at once disabuse themselves of this idea. Careful, but not too prolonged, thorough examination, including laboratory tests, would result in the fact of much less needless gastric surgery while far more cancer patients would be forthcoming at a stage of the disease warranting radical operation. As to the time allowable for carrying out medical means of diagnosis in advanced conditions, diagnosis may be made frequently at the first or second visit. Radical operation is then usually out of the question, but sometimes palliative operation may be of benefit. In earlier cases two or three examinations within a week may establish a condition warranting radical operation, or at least a gastroenterostomy may prolong life. In still earlier cases two or three weeks' time may suffice to diagnose the condition in which, under favorable circumstances, resection may be done. The chief points to be observed in these various classes of cancer patients regarding operations are: 1. The physician should be reasonably certain of the presence of cancer. 2. He should usually know when the case is beyond surgical relief. 3. In cases considered operable he should have a good idea that the conditions warrant at least a palliative, perhaps a radical, operation. Ulcer cases with stasis may be included here. Some of them can not be differentiated from cancer by medical means. 4. In certain cases, either early or late, he should know if the cancer is located at the cardia, and be aware that no operation except gastrotomy as a last resort should be attempted. In the remaining small portion of cancer cases, the true conditions perhaps can not be learned by medical means within three weeks' time. In most of the cases, perhaps all, a surgical exploration should certainly be made.

New York Medical Journal.

November 30.

13 *Possible Progressive Growth in Muscular Efficiency After Fifty Years of Life without Systematic Physical Exercise. H. Fletcher, New York.
14 *Results of Tests for Physical Endurance at Yale Gymnasium. W. G. Anderson, New Haven, Conn.
15 *Bacteriologic Study of Commercial Ice Cream. M. E. Pennington and G. Walter, Philadelphia.
16 *Serum Diagnosis of Syphilis. W. J. Butler, Chicago.
17 *The Ultraviolet Ray and High-Frequency Currents in Phlebitis. S. Tousey, New York.
18 *Obstruction in Nose or Throat as Cause of Nervous and Mental Diseases in School Life. R. H. Johnston, Baltimore.
19 Hyperchlorhydria. Comment on Dr. Paul Cohnheim's Article in the N. Y. M. J., Oct. 12, 1907. A. L. Benedict, Buffalo.

13. **Growth of Muscular Efficiency.**—Fletcher relates how he was led to the ideas as to right living in the matter of feeding which are associated with his name, and the various tests of his method that have been undertaken at different times and in various ways by Van Someren and Prof. Pietro Leonardi, Sir Michael Foster, Professors Pawlow, Mosso, Kronecker, Zuntz, Heger, Dastre, and in this country by Professors Chittenden, Bowditch and Welch. His method depends on careful mouth treatment of food and faithful obedience to the calls of appetite as to the choice and quantity of food and time of eating. In June of this year Fletcher submitted at the hands of Chittenden to a further test intended for comparison with that of four years ago. The results seem to indicate that growing muscular efficiency is possible after 50 years of age. A comparison of the later tests with the earlier show that there has been an improvement in physical efficiency during the past four years. Yet there has been no systematic physical training during that period, or other factor than the method of economic nutrition established by him. Physical exercise is an excellent thing when it is an expression of overflowing energy, but it is not so good when taken in a perfunctory manner in order to burn up excess fuel material in the body. Strength and endurance are different things. What most people want is endurance; they can get all the strength that is needed by mechanical means, but in the work and play of life endurance without fatigue is the chief desideratum. Fletcher does not recom-

mend any particular menu or any particular food. Give the appetite a chance to choose by conforming to the psychical and mechanical requirements of digestion and then let this normal appetite tell what to eat and when to eat. Only the normal appetite of the moment can prescribe with certain accuracy. The first law of Nature is infinite variety. Each person has a problem distinct from that of his fellows, but experiment tends to show that health, endurance, general efficiency and happiness are mainly questions of physiologic nutrition, and that mental calm and appreciation are the most important factors in securing such, while careful buccal treatment is the first assistant.

14. **Physical Endurance.**—Anderson states that the important considerations in the question of diet are what to eat, how much to eat, and how to eat. He reports a series of experiments made at Yale, the details of which in the first six cases have already been made public. The remaining tests were in the person of Mr. Fletcher (Abstract 13) and were with special reference to endurance rather than strength, which terms are thus defined: "By strength is meant 'the utmost force a muscle can exert at once;' by endurance, the number of times it can repeat a given exertion within its strength.'" Anderson found that men become stronger in body by merely thinking of the strength tests, and that thought of certain parts of the body sends blood to those parts. In the tests on Mr. Fletcher, on the first occasion, four years ago (1903), the movements usually used by the crew squads were chosen; they are very trying and tire out beginners, but Mr. Fletcher took them each fifty times with ease, and returned the next day showing not the slightest soreness or lameness and again went through them without distress. On June 11, 1907, he went through a series of endurance trials again, with the result that he showed greater stamina and endurance than he did in 1903, and that he doubled the best Yale record, notwithstanding that he is now nearly 60 years of age and takes no regular systematic exercise.

15. **Ice Cream.**—As a result of a study of 68 samples of ice cream, Pennington and Walter found 55, or 80 per cent., contaminated with streptococci, and in many cases streptococci were found not only in the ice cream, but in the milk and cream from which it was made. Bacterial contamination of ice cream is responsible for much enteric affection. This bacterial content is present in spite of the fact that for preservation purposes many dealers pasteurize their milk, while certain ice-cream makers heat the cream after it comes into their hands. Greater heat is required for whole milk than skim milk. Apparently the presence of fat exercises a protective action on the organisms present.

16. **Serum Diagnosis of Syphilis.**—Butler calls attention to the necessity for a means of certain diagnosis when the question of syphilis arises, and believes it will be found in the serum reaction to syphilis. He describes in detail the principle of serum reaction and its application in syphilis, and says that while in infectious diseases ordinarily the immune bodies disappear during or soon after convalescence, antibodies may be found in syphilis thirty or even fifty years later. It is of importance to the syphilitic to be able to find out how long after effective treatment he remains free from antibodies and probably from active syphilis; for the examinations already made indicate that he does not remain free permanently. The serum reaction may prove a guide to check up and control the patient's destiny, and, possibly to pilot him clear of assaults on his nervous system that result in cerebrospinal syphilis, the parasyphilitic affections, or visceral lues. Especially is the regular methodical use of this method indicated as an index for treatment by watching for the recurrence of immune bodies instead of awaiting the development of evident later manifestations of the disease.

17. **Ultraviolet Rays in Phlebitis.**—Tousey refers to the frequency with which phlebitis of the leg follows typhoid fever, surgical operations or childbirth. He describes a method of treatment by the ultraviolet rays, aided by the ordinary measures of support, massage and local applications, which he has found to be a means of permanently curing certain cases of this nature.

18. **Nose and Throat Obstruction.**—Johnston enumerates the mental and nervous manifestations that may result from nose and throat obstructions—aprosexia, restlessness and night terrors, nocturnal enuresis, headache, speech defects, stuttering, facial chorea, pseudomeningitis, outbursts of temper, nervous cough, epileptic conditions, etc.

Lancet-Clinic, Cincinnati.

November 30.

20 Purulent Conjunctivitis in Infants and Adults. M. D. Stevenson, Akron, Ohio.
21 *"Just Sour Stomach": Every Day Lessons from Every Day Cases. C. A. L. Reed, Cincinnati.
22 Lupus Vulgaris. J. V. Shoemaker, Philadelphia.

21. **Sour Stomach.**—Reed relates a case in which the acceptance of the patient's own popular diagnosis, and treatment by rule-of-thumb methods, led to death from hemorrhage by the erosion of a gastric ulcer. Moral: Examine thoroughly for yourself.

Medical Fortnightly, St. Louis.

November.

23 Isle of Spicy Breezes. R. G. Eccles, Brooklyn.
24 Submucous Window Resection of Cartilaginous Septum. R. H. T. Mann, Texarkana, Ark.
25 *Anomalies of Stigmata of Degeneracy. M. R. Hughes, St. Louis.
26 *Disposition of Appendiceal Stump. B. M. Ricketts, Cincinnati.
27 Purulent Conjunctivitis in Infants and Adults. M. D. Stevenson, Akron, Ohio.

25. **Stigmata of Degeneracy.**—Hughes considers that of all the acts which tend to minimize crime the indeterminate sentence is the most important. A judge's power should rest at committment, as it does when he commits to an asylum. The duration of detention in the penitentiary should be in the hands of the officers thereof, as it is in the hands of the officers of an asylum in the case of a lunatic committed by the judge.

26. Abstracted in THE JOURNAL, Oct. 26, 1907, page 1467.

The Journal of Infectious Diseases, Chicago.

November.

28 *Antibodies to Glucosids, with Special Reference to Rhus Toxicodendron. W. W. Ford, Baltimore.
29 *Specific Nature of Anaphylaxis. M. J. Rosenau and J. F. Anderson, Washington, D. C.
30 *Meningococcus Infections. D. J. Davis, Chicago.
31 *Route of Absorption of Bacteria from the Peritoneal Cavity. H. G. Wells and O. P. Johnstone, Chicago.
32 *Effect of Injection of Killed Streptococci on Streptococco-Opsonic Index of Normal Rabbits. J. P. Simonds, Chicago.
33 *Opsonins in Pneumonia and in Four Streptococcus Infections. N. B. Potter and C. Krumwiede, New York.
34 *Properties Acquired by the Pneumococcus in the Human Body. L. Buerger and C. Ryttenberger, New York.
35 *Vegetative Endocarditis Caused by an Unidentified Pleomorphic Bacterium. A. M. Pappenheimer and H. H. Satchwell, New York.
36 Improved and Rapid Test for Indol in Broth Cultures and in Meat Sugar-free Broth. D. Rivas, Philadelphia.
37 Relative Rate of Growth of Milk Bacteria in Raw and Pasteurized Clean Milk. E. Q. St. John and M. E. Pennington, Philadelphia.
38 Epizootic Lymphadenitis. C. Boxmeyer.

28. **Antibodies to Glucosids.**—Ford has shown, in conjunction with Abel, that in the extract of *Amanita phalloides*—a poisonous mushroom—occurs a hemolytic glucosid with which it is possible to immmunize animals in the blood of which there then develops a specific antibody to the hemolysin. Now the possibility of producing antibodies to glucosids has been denied. Ford's present work deals with poison ivy, the poisonous principle of which for rabbits and guinea-pigs, which die with characteristic symptoms after sufficient doses, is also a glucosid. By immunization of laboratory animals he has been able to produce a definite antitoxic immunity, the serum of such animals containing substances that neutralize the poisonous glucosid of poison ivy (*Rhus toxicondendron*) when both are injected into susceptible animals.

29. **Anaphylaxis.**—According to Rosenau and Anderson, guinea-pigs may be sensitized to three strange proteids, viz., blood serum, egg-white and milk, at the same time. The hypersusceptibility to each proteid substance is manifested by a second injection of the corresponding proteid. The three reactions are as distinct and specific as three separate infectious diseases. The authors, therefore, feel justified in concluding that the phenomenon of anaphylaxis is specific and that chemical changes, rather than morphologic alterations, lie at the basis of this reaction.

30. **Meningococcus Infections.**—In all cases of epidemic cerebrospinal meningitis examined, four of which were fatal, Davis obtained the meningococcus of the Weichselbaum type in pure culture from the cerebrospinal fluid. It was cultivated from the nasal mucosa in four of eight cases and from the blood in two of nine cases examined. In one case it was obtained in nearly pure culture from the secretion of a purulent conjunctivitis. Attempts to cultivate the organism from herpetic eruptions gave negative results. Agglutination of meningococci in the serum of patients occurred in dilutions of 1:50 and in some cases 1:500; the agglutinins appear about the end of the first week. The cerebrospinal fluid contains no agglutinin. In animals immunized against meningococci the serum acquired specific agglutinating power. Meningococci grow in the defibrinated blood of some normal persons, but not in all. Late in the disease the organisms do not grow in the defibrinated blood of the patient, but may do so earlier in the disease. In a fatal case, just before death the meningococcus was obtained from the blood in culture and in this blood *in vitro* it multiplied profusely. The increased bactericidal property of meningitic blood does not appear to be due entirely to leucocytosis because it is shown that the bactericidal properties of the serum increase during the course of an attack.

Strains of meningococci obtained from various sources are about equally freely susceptible to phagocytosis in the presence of serum; they are not taken up by washed leucocytes or in the presence of heated serum. Phagocytosis in meningitic sera is distinctly greater than in normal sera, at least at certain times. Normal cerebrospinal fluid contains no opsonin for meningococci and meningitic cerebrospinal fluid contains opsonin in small amounts only. It was noted that in severe cases phagocytosis of meningococci in the spinal canal is less than in the milder ones, and with a view of increasing phagocytosis in the canal two patients were treated by intraspinal injection of fresh normal human serum. No apparent effect was obtained, probably because of the difficulty of the serum reaching all parts of the meninges. The meningococcus has a low degree of virulence for ordinary laboratory animals and large quantities may be injected subcutaneously, intravenously, or intraperitoneally without fatal results. A homologous meningococcus vaccine was injected subcutaneously into two patients during the latter part of the attack. Both reacted slightly. The first patient made a rapid recovery; the other died five weeks later, the injection having no appreciable effect on the course of the disease. The same vaccine in exactly the same amount was injected subcutaneously into a normal man. Marked toxic symptoms developed. The temperature, leucocyte and opsonic curves promptly rose and after several days more gradually descended to normal. The reaction was much more marked than in the meningitis cases, probably because of the acquired immunity in the latter. One must be cautious in drawing conclusions. In the early stages of the disease, when little immunity is present, meningococcus vaccine should be used, if at all, cautiously and the temperature, leucocyte and opsonin reaction carefully watched. Particularly in protracted subacute and chronic cases efforts at vaccine therapy would seem to be indicated.

31. **Absorption of Bacteria.**—Evidence is presented by Wells and Johnstone that when colon bacilli or streptococci are injected in large numbers into the peritoneal cavity of dogs or rabbits, they begin to enter the blood through the thoracic duct in considerable numbers after from fifteen to thirty minutes in the dog, and in from five to fifteen minutes in the rabbit. The difference in the length of time probably depends on the distance the organisms have to travel in the slowly moving lymph. It is possible that some bacteria enter the blood by some other route than the thoracic duct, but whether the route consists of collateral lymph channels or direct passage into the peritoneal blood capillaries has not been ascertained; neither has it been determined positively whether bacteria do or do not escape directly from the peritoneum into the blood. There is a striking rush of bacteria into the thoracic lymph, so that the maximum number is found almost at once after the first bacteria appear, and begins to decrease in half an hour or less; this corresponds with the observations of Buxton on the appearance of bacteria in the circulating blood after their injection into the peritoneum. It would seem probable that the mechanism of absorption of bacteria from the peritoneal cavity is different from the mechanism of absorption of soluble substances, since the latter seem to pass directly into the blood even more rapidly and abundantly than into the lymph. This is comparable to the condition of absorption in the intestine, the soluble sugar entering the blood directly by diffusion while the emulsionized fat escapes through the lymphatics.

32. **Streptococco-Opsonic Index.**—From Simonds' experiments the following conclusions seem permissible: 1. Single injections of from 50,000 to 2,500,000 or more of dead streptococci in normal animals causes first a fall and later a marked rise in the streptococco-opsonic index. 2. Relatively small doses may cause greater rise in the index than larger doses, and subcutaneous injections may be followed by more pronounced rise in the index than intravenous. 3. Daily injections of increasing doses of dead streptococci do not produce a permanent subnormal opsonic index in normal rabbits, but do have distinctly restraining influence on the index as compared with the effect of single injections.

33. **Opsonins in Pneumonia.**—Potter and Krumwiede obtained approximately the same results in the study of the specific pneumococco-opsonic index in pneumonia as Wolf in Chicago and MacDonald in London have obtained. Their observations suggest a decreased phagocytic power of the leucocytes of pneumonic patients just before crisis, and an increased power during and after crisis. Rosenow, on the other hand, found an increased phagocytic power of pneumonic leucocytes without reference to the stage of the disease.

34. **The Pneumococcus.**—Buerger and Ryttenberger's observations indicate that the human body may exert marked influence on the fermentative properties of pneumococci. In human blood or exudates pneumococci may lose the power to ferment inulin and acquire cultural features common to streptococci. Thus pneumococci isolated from the circulating blood may cause hemolysis of the blood of the host. Pneumococci from the blood of a patient may present different characteristics from those obtained from secondary localizations in the same patient. It is suggested that pneumococci under certain conditions may assume permanent streptococcal features. Frequently a correct diagnosis may be made even when the usual methods fail, by the study of the pneumococcal capsule as brought into view by the capsule stain proposed by Buerger.

35. **Vegetative Endocarditis.**—From a case of vegetative endocarditis Pappenheimer and Satchwell isolated an organism showing the following features: Long slender, non-bacilli, showing marked pleomorphism; filamentous forms, with distinct segmentation and pseudoramification; irregular staining, with the presence of metachromatic granules; decolorization by mineral acids and failure to retain the Gram's stain; strict aerobic growth on all the usual laboratory media save potato; no pathogenicity for guinea-pigs and rabbits. The organism was obtained from the blood on two successive occasions, and an organism presenting identical morphology and staining reactions was present in great numbers in smears and sections of the aortic vegetations, but was not isolated in a pure culture. In the sections of the aortic vegetations, the colonies exhibited a definite and striking radical arrangement of the individual organisms. The authors consider the causative relationship of this micro-organism to the production of the vegetative endocarditis to be beyond question, because of its presence in great numbers within the depths of the thrombotic deposits, and because of its presence in pure culture in the circulating blood during life. The general streptococcus infection found at autopsy is believed to have been a terminal condition, since the streptococci were not found during life in spite of repeated blood cultures, and were not present in the depths of the vegetations.

American Journal of Obstetrics, New York.

October.

39 Chorioepithelioma. T. S. Stone, Washington, D. C.
40 •Effect of Blood Transfusion on Patient with Puerperal Eclampsia. W. J. S. McKay, Sydney, N. S. W.
41 •Time Factor in Surgical Operations. W. B. Chase, Brooklyn.
42 •Ruptured Pus Tubes. E. C. Mann, Buffalo, N. Y.
43 Influenzal Meningitis. W. M. Sprigg, Washington, D. C.

44 *Scope of Treatment of Acute Pelvic Infections in Women by General Practitioner. J. W. Bovée, Washington, D. C.
45 Blood Platelets During Pregnancy, Labor, the Puerperium and Menstruation, and in the New Born. S. Rebaudi, Genoa, Italy.
46 Ectopic Pregnancy. I. T. Kelley, Washington, D. C.
47 *Heart Complications of Scarlet Fever. I. H. Eddy, Chicago.

40. **Blood Transfusion in Puerperal Septicemia.**—McKay describes the beneficial results of transfusion of blood after a negative effect from enormous injections of antitoxin in a case of puerperal septicemia. He describes with illustrations a method of his own devising in which the blood flows into a receiver and is then transmitted to the recipient instead of directly uniting the blood vessels of the giver and the recipient. The procedure is simple and the giver runs no risk of infection.

41. **Time Factor in Operations.**—Chase reports a number of details tending toward time economy and consequently toward the lessening of shock in surgical operations—the employment of skilled anesthetists, the Mikuliez tampon to control bleeding, the maintenance of proper bodily temperature during the operation, and orderly arrangement of instruments, sponges, etc., a preparedness for the accidental and unexpected, and having at command helpers trained to work with the operator.

42. **Ruptured Pus Tubes.**—Mann calls attention to the fact that pus abscesses do rupture, and therefore urges carefulness in examination for pyosalpinx. With a history of pyosalpinx and beginning peritonitis, operation is in order, even in the acute stages. The prognosis is much brighter in these cases than in ruptured appendix, owing to the nature of the infection and the resistance of the patient.

44. **Acute Pelvic Infections and the General Practitioner.**—Bovée makes the following suggestions: 1. The treatment of acute pelvic infections is, as a rule, nonoperative, but one of palliation and expectancy. 2. Practically analgesics other than the external application of ice are not needed, and are harmful. 3. If surgical intervention becomes necessary during such acute stage of pelvic infection it will be a simple procedure of vaginal incision and drainage, though extremely rarely abdominal incision will be required for this purpose. 4. A certain percentage of such infections results in symptomatic relief or cure by such palliative treatment. A much larger proportion (the suppurative cases) will require operation, of which the vaginal incision and drainage, either during the acute stage or later, will be sufficient as many times as it fails, and when it fails radical surgery will have to be employed. 5. Rarely indeed will radical abdominal operation be required during the acute stage of pelvic infection.

47. **The Heart in Scarlet Fever.**—Eddy considers that affections of the heart have not received the attention that an organ so important, and as he thinks so frequently involved, should. The principal factors of heart complications are the toxemia of the pyrexial stage and the late toxemia of nephritis, to which he adds exertion, vomiting, toxemia of complications, rapidly developed anemia, and the action of toxins on the cardiac nerve supply. The profession seems to be of the opinion that nephritis is the great factor to be dreaded in the production of heart complications, but Eddy suggests conversely that the heart is an important factor in the production of nephritis. Many cases of sudden death attributed to edema of the lungs he considers due to acute dilatation of the heart. An extremely important premonitory symptom is the sudden change from a rather strong, full, regular pulse to one of irregular rhythm and variable or almost imperceptible tension. He discusses the other symptoms in detail and in regard to the prevention of heart complications emphasizes the importance of rest in bed, strictly liquid diet, avoidance of antipyretics, using in place thereof the cold sponge, the pack or the evaporation bath, special attention to oral sepsis, skin, bowels and kidneys, and the discontinuance of all medication if vomiting persists. He takes the treatment of heart lesions collectively and in addition to hygienic and general methods speaks well of strychnin, alcoholic stimulants and camphor. Digitalis, he states, should not be used as a rule. Rapidly irregular action calls for the ice bag; the pulse and murmur condition determine the time for getting up. Peptonates of iron and arsenic are recommended for the anemia.

Archives of Pediatrics, New York.

October.

48 *Grip Meningitis. S. S. Adams, Washington, D. C.
49 *Use in Practice of Theoretical Resources Provided by Percentage Feeding. C. H. Dunn, Boston.
50 *Conclusions from Our Knowledge of Milk Proteids. T. S. Southworth, New York.
51 *Cane Sugar in Relation to Some Diseases of Children. C. G. Kerley, New York.
52 Chronic Cervical Adenitis. J. T. Schell, Philadelphia.
53 Duration of the Prodromal Period in Roetheln. D. J. M. Miller, Philadelphia.
54 Four Cases of More Than Average Interest in Children. A. W. Fairbanks, Boston.

48. **Influenzal Meningitis.**—Adams points out that although meningitis has been recognized clinically as an occasional complication of influenza, in only a few cases was the diagnosis based on bacteriologic findings. He collects all the cases, 21 in number, hitherto reported, in which the diagnosis of grip meningitis was confirmed by the cultivation of the Pfeiffer bacillus in pure culture, and adds a case of his own, claimed to be the first case of influenzal meningitis reported by an American, in which the diagnosis has been confirmed by finding the Pfeiffer bacillus in pure culture in the cerebrospinal fluid removed by lumbar puncture during the life of the patient.

49. **Percentage Feeding.**—Dunn believes that the resources provided by percentage feeding of cow's milk are sufficient, if properly used, to meet most of the problems arising in regard to the diet of the human infant. The attempt should be made to imitate nature by building up a food from the constituents of cow's milk, viz., sugar, fat, soluble proteid of whey, and casein. With these elements, by using various proportions of whey as a diluent, the constitution of mother's milk can be closely imitated and mixtures containing any proportions which are thought suitable for the individual child can be prepared. The diagnosis should be carefully made and the history of the previous dietary accurately ascertained; the child should be placed first on a weak food, such as fat 2.0, sugar 5.0, whey proteid 0.25, and caseinogen 0.25. In a very large proportion of cases infants will be found to gain on fat 2.0, sugar 5.0, whey proteid 0.9 and caseinogen 0.25. Next the fat and caseinogen can be alternately increased by small successive steps until the limit of tolerance of each is definitely determined. Dunn regards the addition of cereals, alkalies, sodium citrate, etc., and peptonization as less natural than percentage modification of cow's milk and thinks these measures should be reserved for special cases in which they may render valuable aid.

50. **Proteids of Milk.**—Southworth insists on the importance of a knowledge of the different proteids of cow's milk and the changes which they undergo in curdling and digestion. The practitioner should make himself familiar with the reason for the various additions to milk which have their basis in the chemical changes which they produce in casein. Such knowledge is the only safeguard against falling into the routine use of set formulas and feeding tables, which, while they may give good results in a large number of cases, are liable to be the occasion of failure and even injury in some special cases.

51. **Cane Sugar in Children's Diseases.**—Kerley finds that children vary remarkably in their power to bear cane sugar. In some children large amounts up to three or four ounces could be taken without harm, while in others a few grains would produce signs of sugar poisoning. In a class of children whom he designates as "sugar susceptibles" the ingestion of sugar was apparently connected with various recurrent maladies, especially of the upper respiratory tract and of the skin, including asthma, asthmatic bronchitis, nasal catarrh, tonsillitis, eczema, urticaria, and also such general affections as chorea, recurrent vomiting and rheumatism. In these cases removal of sugar from the diet was an important element in the successful management of the disease.

American Journal of Medical Sciences, Philadelphia.

November.

55 *Gastromotor Insufficiency Due to Perigastric and Duodenal Adhesions. F. Billings, Chicago.
56 *Chylous Ascites and Chylous Pleurisy in Lymphocytoma Involving the Thoracic Duct. G. Dock, Ann Arbor, Mich.
57 *Long-Continued Fevers. H. C. Moffitt, San Francisco.

58 *True Intestinal Dyspepsia. M. Einhorn, New York.
59 *Paroxysmal Tachycardia. E. Schmoll, San Francisco.
60 *Dilatation of the Heart. T. A. Claytor, Washington, D. C.
61 *Résumé of Physiology of the Kidney with a View to Therapeutics. V. E. Henderson, Toronto, Canada.
62 Otitic Brain Abscess. E. B. Dench, New York.
63 Actinomycosis of Skin of the Foot. L. Buerger, New York.
64 *Hemorrhages in the Course of Bright's Disease, with Reference to Hemorrhagic Diathesis of Nephritic Origin. D. Riesman, Philadelphia.
65 Clinical Study of Five Hundred Cases of Conjunctivitis. H. McKee, Montreal, Canada.
66 *Opsonic Index in Erysipelas and Its Relation to Treatment by Inoculation of Killed Streptococci. E. H. Schorer, New York.

55 and 57. Abstracted in THE JOURNAL, June 1, 1907, page 1896.

56. Abstracted in THE JOURNAL, June 1, 1907, page 1895.

58. **Intestinal Dyspepsia.**—Einhorn distinguishes two large groups of intestinal disturbances: 1. Digestive disturbances which concern all three classes of food substances (albuminates, carbohydrates, fat); "dyspepsia intestinalis universalis." 2. Digestive disturbances affecting only certain classes of foodstuffs: "dyspepsia intestinalis partialis." This second group may be subdivided according to the varieties of food, the digestion of which is disturbed: (a) Disturbed digestion of proteids; (b) carbohydrates; (c) fat, and (d) two classes of food, namely, proteids and carbohydrates, carbohydrates and fats, and proteids and fats. He reports seven illustrative cases, the first two of which show that complete intestinal dyspepsia may exist for a long time without necessarily endangering life. Disturbances of carbohydrate digestion seem to be most frequent, and those of meat digestion the rarest.

59. **Tachycardia.**—Schmoll divides tachycardias into four etiologic groups: 1, Cases of paroxysmal tachycardia occurring in patients with previously damaged heart; 2, cases of paroxysmal tachycardia in patients affected with dysthyreosis; 3, cases of paroxysmal tachycardia in patients exhibiting central nervous lesions, and 4, cases of apparently functional character, so-called idiopathic group. He gives illustrative cases from each group. The argument in his paper emphasizes the pathologic importance of the atrioventricular conducting system. He considers it interesting to note that paroxysmal and permanent bradycardia as well as paroxysmal tachycardia can be referred to a lesion of the bundle of His.

60. Abstracted in THE JOURNAL, June 1, 1907, page 1893.

61. **Physiology of the Kidney.**—Henderson reviews the physiology of the kidney in regard to its internal secretions, its synthetic and analytical functions and its tubular excretions, and after analyzing the old-time theories of Ludwig and Heidenhain, of which he aims to demonstrate the contained fallacies, he indicates what he thinks to be the probable constructive lines of a new theory to explain the production of urine as follows: On the one hand we may believe that the glomerulus excretes water, urea, chlorids and, possibly, other salts, and that it must be so delicately adjusted as to respond to very small variations in the amounts of these substances in the blood and have a selective excretory activity for each substance, which may be either increased or decreased by disease, etc. Sulphates and phosphates may be added by the tubules with such other substances as the urates. It may be that each constituent is added by a different secreting mechanism. It might also be sugggested that the excretory activity regulated the amount and distribution of the blood flow. On the other hand, the researches of Kahlenberg may lead us to a new physical conception of semipermeable membranes, and of diffusion, and may thus open for us entirely new conceptions in regard to animal membranes and the rôle that osmosis plays within the body.

64. Abstracted in THE JOURNAL, May 25, 1907, page 1807.

66. The principal points of this article are abstracted in THE JOURNAL, May 25, 1907, page 1808.

Cleveland Medical Journal.

November.

67 Relation of the Medical Profession to the Laity. N. S. Schwartz, South Newbury, Ohio.
68 Induction of Premature Labor in Moderately Contracted Pelvis. A. J. Skeel, Cleveland.
69 Nervous Disorders Due to the Teeth. H. S. Upson, Cleveland.
70 Bier Treatment—Report of Cases. J. Dickenson, Cleveland.

Colorado Medicine, Denver.

November.

71 *Medical Organization. H. D. Niles, Salt Lake City, Utah.

71. This article will be taken up in the Department of Medical Economics later.

Illinois Medical Journal, Springfield.

November.

72 *Case of Puerperal Infection with Reference to Its Etiology. R. T. Gilmore, Chicago.
73 *Cesarean Section. E. C. Franing, Galesburg.
74 *Treatment of Pelvic Infections and Technic of Pus Tube Operations. C. W. Barrett, Chicago.
75 *Hyperemesis During Gestation. E. M. Minnick, Moline.
76 Education of Physicians and Public Regarding Insanity. F. P. Norbury, Jacksonville.
77 Treatment of Chorea Minor. D. Hecht, Chicago.
78 *Treatment of Varicose Veins and Ulcers. W. S. Royce, Chicago.
79 Treatment of Severe Cystitis. G. Kolischer, Chicago.
80 *Early Diagnosis and Treatment of Multiple Neuritis. J. Grinker, Chicago.

72 and 80. Abstracted in THE JOURNAL, June 22, page 2150.

73 and 78. Abstracted in THE JOURNAL, June 22, 1907, page 2151.

74. Abstracted in THE JOURNAL, June 29, 1907, page 2204.

75. **Hyperemesis Gravidarum.**—Minnick considers the etiology and discusses the various forms of hyperemesis gravidarum under the following headings: 1. Toxemic: (a) intestinal, (b) hepatic, (c) ovarian, (d) renal. 2. Reflex. 3. Neurotic. He further discusses the symptoms, diagnosis and treatment, reporting four illustrative cases.

Ophthalmic Record, Chicago.

November.

81 Unilateral Nystagmus Benefited by Treatment. F. H. Verhoeff, Boston.
82 Radical Cure of Vernal Conjunctivitis. L. W. Fox, Philadelphia.
83 Rare Type of Perivasculitis Retinæ in Young Woman with Inherited Syphilis. C. A. Oliver, Philadelphia.
84 Magnetic and Non-Magnetic Properties of Iron Alloys. M. Frank, Chicago.
85 Glaucoma After Cataract Extraction with Iridectomy. A. E. Bulson, Jr., Fort Wayne, Ind.
86 Test Card for Illiterate. C. A. Oliver, Philadelphia.

St. Louis Medical Review.

October.

87 Habitus Enteroptoticus. J. S. Myer, St. Louis.
88 Cataphoresis. J. W. Wainwright, New York.
89 Phases of Medical Journalism. W. F. Waugh, Chicago.
90 Surgical Difficulties Without Hospital Advantages. A. Avery, Sapulpa, I. T.
91 Surgery of the Ureter: B. M. Ricketts, Cincinnati.

Journal of Cutaneous Diseases, New York.

November.

92 *Gangræna Cutis Hysterica. H. P. Towle, Boston.
93 *Gangosa with Additional Notes. O. J. Mink and N. T. McLean, Washington, D. C.
94 *Thyroid as Factor in Chronic Urticaria. M. L. Ravitch, Louisville, Ky.
95 *Zoster Arsenicalis. J. Zeisler, Chicago.
96 *Radiograms of Syphilis of the Long Bones. M. W. Ware, New York.

92. Abstracted in THE JOURNAL, Oct. 5, 1907, page 1213.

93. Abstracted in THE JOURNAL, Oct. 12, 1907, page 1305.

94. Abstracted in THE JOURNAL, Oct. 5, 1907, page 1215.

95. Abstracted in THE JOURNAL, Oct. 12, 1907, page 1306.

96. Abstracted in THE JOURNAL, Oct. 12, 1907, page 1306.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

November 16.

1 *Pathology of the Living. G. A. Moynihan.
2 *Saccular Theory of Hernia. R. W. Murray.
3 *Simple Operation for Uncomplicated Oblique Inguinal Hernia in Young Adults. G. L. Chiene.
4 Morbid Anatomy and Pathology of Infantile and Encysted Hernia. R. H. Russell.
5 Use of Silver Wire Filigrees in Cure of Hernias Usually Considered Inoperable. L. McGavin.
6 Estimation of Fat in Feces. I. W. Hall.
7 Motile Elements Seen in Certain Cerebrospinal Fluids. F. C. Eve.
8 Perithelioma and Endothelioma and Their Position in Oncology. P. G. E. Bayon.
9 Sporozoon in Aural Polypi. J. M. Beattie.

10 Mycosis Fungoides. Its Relationship to Infection and to Malignant New Growth. F. G. Bushnell and A. W. Williams.
11 Pericardial Calcification. J. J. S. Lucas.
12 Experimental Chemotherapy in Trypanosome Infections. C. H. Browning.
13 Phagocytosis and Bactericidal Action. G. Dean.
14 Opsonic and Agglutinative Power of Blood Serum in Cerebrospinal Fever. T. Houston and J. C. Rankin.
15 Method of Recognizing Presence of Specific Substances in Blood Serum Influencing Phagocytosis and Its Diagnostic Application. L. C. P. Ritchie.
16 Absorption from Peritoneal Cavity. B. H. Buxton.
17 *Red Light and Iodin Paint. J. Dunbar-Brunton.

1. **Pathology of the Living.**—Moynihan states that the knowledge gleaned on the operating table has shown that at least no small part of postmortem room pathology is insignificant in value as compared with the pathology of the living. He cites the fact that during twenty-five years at Guy's Hospital 11,031 autopsies had been performed and gallstones were found in only 333 cases. He points out the contributions made by the surgeon through the study of the pathology of the living to the science of medicine. The surgeon's work has shown that chronic ulcer of the stomach or of the duodenum is a far more common disease than was formerly believed. By a comparison of the results obtained through the pathology of the living in operations with the clinical history we are now enabled to recognize these conditions in an early stage from the history alone. He draws a graphic picture of the typical anamnesis in such cases, as pointing to what in past times has been considered gastritis, colic, spasm, acid dyspepsia and what not. The relationship between chronic ulcer of the stomach and cancer is another contribution of surgery to medicine. Incidentally Moynihan states that as a cause of symptoms the ulcer which can not be demonstrated does not, in his opinion, exist. In the absence of a visible ulcer the performance of gastroenterostomy will tend only to discredit the operation. In regard to diseases of the biliary passages, the pathology of the living now demonstrates that symptoms taken in the past to indicate the presence of stones were in fact called forth by the severe complications to which the stones gave rise. Jaundice, for instance, which was regarded as essential to a diagnosis of cholelithiasis, is a very infrequent symptom. The impaction of a stone in the common duct is by no means a rare event. The dictum that a patient with a stone in the duct should not be operated on because he is likely to recover if left alone is based on such facts as that in forty years only one case of common-duct stone was found on the postmortem table at Guy's. The surgeon's experience shows the fallacy of this. Moynihan denies the accuracy of the statement that gallstones may exist in the gall bladder for years without causing symptoms, asserting that they do cause symptoms which, however, we are not educated to recognize. Chronic pancreatitis is another contribution of surgery to medicine, and incidentally Moynihan expresses satisfaction at the great help he has received from Cammidge's test, although the question of its value has caused much discussion. In like manner, he deals with diseases of the large intestine and tuberculous peritonitis, and emphasizes the fact that tuberculous peritonitis is always secondary to a local infection, which must be removed if permanent success is to be ensured. So far as abdominal diseases are concerned, he is the best diagnostician who spends much of his time in the operating room, where the lessons are far greater in number and far outweigh in value those that can be learned in the postmortem room, so far as they bear reference to the treatment of the living.

2. **Hernia.**—Murray sums up the evidence in favor of the saccular theory of hernia, applying it to oblique inguinal hernia, direct inguinal hernia, umbilical hernia and femoral hernia, and concludes that circumstantial evidence in favor of the saccular theory of these hernias is so strong and so convincing that he feels sure that it will ultimately attain a verdict. The subject is not merely of academic interest, but has an important bearing on treatment.

3. **Hernia in Young Adults.**—Chiene suggests an operation based on the following hypothesis: 1. For practical surgical purposes all oblique inguinal hernias are primarily due to congenital or preformed sac. 2. In young adults suffering from oblique inguinal hernia the valvular action of the muscles guarding the internal abdominal ring will regain its normal action if the cause of the dilatation of the canal be removed. 3. If the neck of the sac be efficiently dealt with, it is quite unnecessary to interfere with the remaining portion of the inguinal canal or scrotum. An incision is made half an inch above and parallel to the middle third of Poupart's ligament, the center of which corresponds to the position of the internal abdominal ring. The external oblique is thus exposed, incised in the direction of its fibers, and retracted, the lower portion of the internal oblique and upper portion of the cremasteric muscles coming into view. The fibers of the latter are divided in the same direction as those of the external oblique. The lower edges of the internal oblique and transversalis, being retracted upward and outward, and the transversalis fascia exposed, the fascia is dealt with in like manner with the external oblique and cremasteric muscles. The neck of the sac is thus exposed at the internal ring, freed from the cord, opened and divided. The neck is ligated and fixed to the under surface of the abdominal wall, above and externally to the internal abdominal ring, the rest of the freed portion being cut off. The second stage consists in suturing the split fibers of the external oblique by the overlapping method and closing the skin incision. In some cases the fibers of the cremasteric are drawn together with a single stitch, but in most cases they will fall into position naturally. The internal oblique and transversalis are left untouched and the sac, with the exception of a small portion of the internal ring, is left.

17. **Red Light and Iodin.**—Brunton points out that if iodin is painted on the human skin in the dark, only a red light, such as that of an ordinary photographic lantern being used, and the part immediately covered without exposure to white light, absorption will be rapid and there will be neither discoloration nor blistering, even under prolonged use.

Lancet, London.

November 16.

18 *Future of Electricity in Medicine. W. D. Butcher.
19 *Analysis of 274 Additional Cases of Removal of Goiter by Operation. J. Berry.
20 Comparative Researches on Tryptic Strength of Different Trypsin Preparations and Their Action on the Human Body. P. T. Hald.
21 Treatment of Bacterial Infections by Vaccines. G. T. Western.
22 Second Case of Aneurism of Right Subclavian Artery Treated by Ligature of Axillary and Carotid Arteries with Resulting Cure of Aneurism. H. G. Barling.
23 *Significance of a Hitherto Undescribed Wave in Jugular Pulse. A. G. Gibson.
24 Diverticulum of Bladder in Femoral Hernia, without Sac. Operation. J. Hutchinson.
25 Foreign Body in Left Bronchus of a Child Expelled Through Tracheotomy Wound on Fifteenth Day After Inhalation. H. S. Clogg.
26 Occasional Necessity of Drainage of Uterus in Puerperal Infection. A. A. Warden.
27 Case of Cirrhosis of Liver in Which Cure of Ascites Followed Operation for Relief of Strangulated Umbilical Hernia. J. Clay.

18. **Electricity.**—Butcher, in his inaugural address on the opening of the electrotherapeutic section of the new Royal Society of Medicine, discussed in detail the technic and desiderata of Roentgenography. He looks forward to the invention of an ideal focus tube, "a fixed and unvarying source for the emission of ethereal undulations of definite wave length and constant intensity," to an increase in the sensitiveness of the plate, and to a reduction of the time of exposure. Chest diagnosis by the Roentgen ray is developing rapidly, and will take its place beside, if it does not overshadow, the older clinical methods. By radiotherapy all embryonic or rapidly growing neoplasms are apparently destroyed with equal facility, provided they are sufficiently circumscribed and are surrounded by healthy tissues. Dosage is the most important question in Roentgen therapy. The first sign of leucopenia is a contraindication to further *x*-ray treatment. He insists on the use of small doses. "The efficacy of Bier's '*Stauung*' treatment seems to indicate that an abundant supply of lymph is the chief factor in Nature's mechanism of healing." If this be so, he knows of no means of producing this limited and localized hyperemia more certain than radium or *x*-ray irradiation. He utters a warning anent the effects of over-radiation on development in the young, with special reference to the use of the rays for epilation in ringworm. He discusses the high-frequency current, which should not be tabooed merely because the injudicious have made too great claims for it or used it without

discrimination. He states that the time-honored treatment by internal medication is in reality ionic medication. There are two precautions of the first importance in ionic treatment: 1, The absolute steadiness of the current; 2, the very gradual rise and fall of potential when switching the current on and off. Storage batteries are much better in the first respect for all galvanic and ionic treatment, than the use of the current from the public mains. A much-needed instrument for the second is an automatic contrivance for very gradually turning the current on and off. The pain is caused not by intensity, but by variation of intensity. Finally he discusses the subject of electric sleep. By Leduc's method not only general anesthesia, but even a limited local anesthesia can be induced. The importance of a means of inducing nerve sleep is increasing as the stress of civilization advances.

19. **Goiter.**—Berry, as the result of an analysis of 274 cases, says that operations for simple goiter yield admirable results and afford, as a rule, complete relief from the symptoms; but the operation is a delicate one, not to be undertaken lightly or without due attention to details—especially anesthesia and asepsis, the careful arrest of all hemorrhage, particularly venous, care for the recurrent nerve, and drainage for a short time. In most operations it is best not to remove that portion of the goiter that lies next to the esophagus, recurrent nerve and side of the trachea. The patient should be encouraged to be up and about within a few days of the operation.

23. **An Undescribed Pulse Wave.**—Gibson describes, in those persons whose pulse rate is slower than the average (sixty a minute or under), a wave between the *v* wave and the *a* wave. It is most typically seen in normal young adults who are in the habit of taking vigorous exercise or who are convalescent from acute diseases. The form of the wave varies. Sometimes it is an almost vertical uprising with a straight top; at other times a well-defined short wave. The form of the wave seen in its largest examples is one in which on the upstroke there is a small indentation just before the summit, and is similar in many respects to another nick which has been described on the *v* wave as being due to the closure of the semilunar valves. When a series of these waves is shown in a tracing they are found to bear a constant relation to the preceding systole as measured from the beginning of the auricular or carotid wave. It is conceivable that this extra wave may be due to the closure of the auriculo-ventricular valves by the natural filling of the ventricle with blood and the slight increase in pressure which the upward movement of the valves would cause in the venous system.

Medical Press and Circular, London.

November 13.

28 Deformities of the Foot Associated with Abduction. E. M. Corner.
29 Death from Hemorrhage from a Medicolegal Point of View. *Hendrick.
30 A Generation's Observation of Disease. J. O. Affleck.
31 *Simple Operation for Uncomplicated Oblique Hernia in Young Adults. G. L. Chiene.
32 Limitation of Mortality from Tuberculosis. W. R. MacDermott.

31. See abstract No. 3.

Clinical Journal, London.

November 13.

33 Genitourinary Infection, Especially Colon Bacillus Cystitis. C. B. Lockwood.
34 Beriberi. F. M. Sandwith.
35 Unusual Cases of Diabetes. J. R. Bradford.

The Practitioner, London.

November.

36 Lower Limit of Age for School Attendance. A. Newsholme.
37 *Nature of the Expansion Phase of the Cardiac Cycle and Phenomena Associated with It. T. S. Wilson.
38 Movable Kidney. (Continued.) C. M. H. Howell and H. W. Wilson.
39 Opsonic Treatment of Pulmonary Tuberculosis by Tuberculin. E. Turton.
40 *Rectal Feeding. F. C. Moore.
41 Surgical Cases. J. C. Renton.
42 Unusual Abdominal Cases. T. B. Henderson.
43 *Weak Hearts in General Practice. G. Lambert.

37. **Expansion Phase of the Cardiac Cycle.**—Wilson advocates the view that the ventricles of the heart are filled by their own muscular action and not by the auricular contraction, and he essays to show how this theory suffices to explain the various phenomena observable in valvular disease of the heart. The belief is gaining ground that the heart is a double-acting pump, filling its chambers by its own back stroke, and that the ventricles are not dependent on the auricle or other outside agencies, so far as the reception of the main part of their charge is concerned. Wilson considers that the cardiograph demonstrates conclusively that the phase of ventricular contraction is followed by an active expansion movement. After considering the application of this view in detail to the sounds and murmurs of the heart, he suggests an alteration of the nomenclature of some of the heart sounds and murmurs as follows: The first sound marks the commencement of ventricular contraction or systole (contraction or systolic murmurs may be produced at mitral, aortic, tricuspid valves, etc.). The second sound marks the commencement of expansion (an expansion murmur occurs in aortic regurgitation). The third sound, when present, marks the onset of relaxation; 1, A relaxation murmur may occur in mitral stenosis, etc.; 2, occasionally at the tricuspid orifice in dilatation of the right heart; 3, as an addition to the expansion murmur in aortic regurgitation.

40. **Rectal Feeding.**—Moore holds that rectal feeding amounts at best to a pronounced subnutrition and that only in exceptional cases in which the metabolic processes have been gradually reduced to an abnormally low level is it possible to provide an amount of proteid such as will establish nitrogenous equilibrium and so prevent disintegration of the proteid tissues of the body or of foodstuffs, having a total energy value beyond one-quarter of that dissipated by the organism. In the average case, rectal feeding is associated with progressive loss of weight, and at times a subnutrition may proceed to such a degree as to induce a condition of acid intoxication particularly in the female. It can not be relied on to effect that improved nutrition desired by the surgeon before operation. It is doubtful whether it secures the absolute functional rest required in certain gastric cases, for according to Winternitz, rectal feeding is associated with a secretion of gastric juice. The best results, then, according to Moore, are to be obtained from enemata of predigested proteids, of albumoses or peptones, the two latter in 10 per cent. concentration, of emulsified fat in the form of milk or yolk of egg, and of glucose in 10 per cent. concentration with the addition of sodium chlorid to 1 per cent.

43. **Weak Hearts.**—Lambert states that in all weak hearts one or more of the following factors contribute to produce morbid effects: Morbid conditions of the cardiac muscle cells—impaired functional activity, degeneration. Deficiency in quality or quantity of the general blood stream. Degenerative changes in the arterial system, particularly in the aorta and coronary arteries, causing ischemia of the myocardium. Derangement of nervous control by the cardiac center and nerves. The most common varieties of the weak heart, as seen in general practice, are included in what the author considers the most profitable classification, viz., made on an etiologic basis when coupled with constant remembrance of the four factors above enumerated. In such a classification he considers in detail weak hearts under the following six groups: 1, The anemic; 2, the nervous or neurotic; 3, the alcoholic; 4, the post-febrile; 5, the athletic or strained; 6, the senile.

Dublin Journal of Medical Science.

November.

44 Choice of Medical Career. Medical Ethics and Etiquette. J. Craig.
45 *Sleep. (Concluded.) R. S. Oldham.

45. **Sleep.**—Oldham summarizes the various theories as to the causation of sleep as follows, the last being the one suggested by him in the present paper. 1. Chemical influences, which (a) directly diminish nerve activity; (b) reflexly affect the circulation in the brain. 2. Circulatory influences, the vasomotor center becoming fatigued owing to its continued activity. 3. Histologic influences, breaking the chain of neurons by (a) the shrinkage of the nerve cell during fatigue; (b) retraction of the dendrites; (c) blockage by the insulating neuroglia. 4. Molecular influences, whereby sleep becomes the natural expression of a phase of decreased excitability due to (a) a predisposing cause—viz., the removal of a certain

amount of nerve tonus by the voluntary cutting off of sensory stimuli; and (b) an exciting cause—viz., the setting in of a tide of anabolism following the cumulative katabolism of the day's work, and brought about by the self-regulating adjustment of the cell. He claims for this hypothesis that it is a comprehensive one, striking down to the very root of existence, the varying conditions of the protoplasmic molecules. Too much importance has hitherto been attached to brain changes, for animals deprived of their cerebral hemispheres will go to sleep in a normal manner. Every tissue becomes exhausted by overwork and sleep affects every cell in the body. This hypothesis accounts for dreaming, demonstrates the reasons for the ravages of insomnia and the deleterious effects of hypnotics, and gives a possible explanation of some pathologic conditions of the sleeping state.

Glasgow Medical Journal.

November.

46 *The Medico-Chirurgical Society of Glasgow, 1814 to 1907. W. Downie.
47 *Difficulties in Diagnosis of Gastric Derangements. A. E. Maylard.
48 *Treatment of Chronic Middle Ear Suppuration in Light of Pathologic Findings in 50 Cases. J. K. Love.

46. **The Medico-Chirurgical Society of Glasgow.**—Downie, in his presidential address, gives an exhaustive, interesting and amusing account of the history of this important society from its foundation in 1814 to 1907. The article is accompanied by portraits of Robert Watt, Prof. Thomas Thompson, Prof. Allen Thompson and Sir William Gairdner.

47. **Gastric Derangements.**—Maylard indicates the following features connected with the normal structure and functions of the stomach, as the headings under which a systematic examination of functional derangements must be conducted: 1, Dietetic; 2, motor; 3, sensory; 4, vascular; 5, secretory. He considers these subjects in detail.

48. **Middle-Ear Suppuration.**—From the pathologic findings in fifty cases Love concludes that ossiculectomy for middle-ear suppuration is not often a wise procedure. When operation is necessary at all, the mastoid operation is that of choice. When the mastoid operation is not necessary a careful cleaning of the ear will usually procure cessation of the discharge. Ossiculectomy may be useful in a small number of cases in which the disease seems limited to the ossicles, and, as better than nothing when the mastoid operation is declined. The period of healing is longer after ossiculectomy than after the radical mastoid operation. Though some cases refuse to heal after either or both operations, even if a little discharge be left after the radical mastoid operation the patient is in a much safer position than he who, having had his ossicles removed, has a little discharge left which may proceed from diseased products pent up in his unopened mastoid cells.

Presse Médicale, Paris.

November 6, XV, No. 90, pp. 721-728.

49 *Syphilis at the Recent Congress of Hygiene and Demography. C. Levaditi.

November 9, No. 91, pp. 729-736.

50 Defensive Reactions of the Organism Against Infections. Roger.
51 *Mercury in Pill Form. (Pilules mercurielles.) A. Martinet.

November 13, No. 92, pp. 737-744.

52 The Heart in Goiter. (Cœur des goitreux.) L. Bernard and A. Cawadias.
53 *The Ion of Phosphorus. (Ion phosphorique.) C. Schmitt.

49. **Syphilis at the International Congress of Hygiene.**—With the exception of Siegel and his pupils, all the speakers on syphilis at this congress considered the pale spirochete (*Treponema pallidum*), as the causal agent of syphilis. The deviation of the complement test was also recognized as a specific differentiating seroreaction in the tissues of individuals who have or have had syphilis, and its wide application in the clinic was endorsed. Metchnikoff, Roux and Salmon corroborated their previous statements in regard to the simple and easy prophylaxis of syphilitic infection by local application of a salve consisting of calomel, 33 parts, lanolin 67 parts and vaselin 10 parts. Subcutaneous injection of a minimal dose of a preparation of arsenic also proved able to prevent general infection in monkeys.

51. **Pills of Mercury.**—Martinet does not approve of mercurial medication by the mouth, as a rule, but, if conditions require it, he says that addition of glycerin will keep the pills from drying up. He combines opium and guaiac with the mercury and glycerin, to increase the tolerance of the intestines for the mercury, using 1 cg. of the bichlorid of mercury, 2 cg. of extract of opium, and 4 cg. of "extract of guaiac," adding glycerin q. s. to make one pill. Five other formulas are given, varying some of the ingredients. Two or three of these pills are taken daily before or during meals; if the patient tolerates the mercury the dose may be increased to six a day, if necessary.

53. **The Ion of Phosphorus in Treatment of Tabes, Etc.**—Schmitt reports very favorable results in two cases of tabes from phosphorus given by electrolysis. He used a 4 per cent. solution of sodium phosphate, to which he added an equal amount of hot water just before using. The negative electrode was impregnated with this and was applied to the lumbar region. The positive electrode was impregnated with a solution of sodium or calcium chlorid and was applied to the first dorsal vertebra. The current ranged from 20 to 110 milliamperes. Six seances of this phosphoric ionization, as he calls it, banished the pains and restored strength to the legs in a case of tabes in a man of 50. Improvement was also obtained in a case of tabes in the paralytic stage in a man of 53, and also in a case of chronic tuberculous arthritis in a woman of 34.

Semaine Médicale, Paris.

November 13, XXVII, No. 46, pp. 541-552.

54 Acute Uremia and Transient Spinal Polynucleosis. A. Chauffard.
55 The Tendon Reflexes May Exceptionally be Absent in Health. (Les réflexes tendineux sont-ils constants ou variables chez les sujets bien portants?)
56 *The Professional Type of Medical Man and Medical Education. (Type professionel du médecin.)

56. **The Physician as a Professional Type.**—The *Société de Sociologie*, Paris, has been making a study of professional types and has recently discussed the medical man. It was decided that there seems to be no special outward type now, except possibly for the country practitioner. The city physician is a man of the world, a society man, golf player, etc., like other men of his standing. The mentality of physicians, however, offers a special type, as all bear the imprint of the same education. One of the speakers, de Tarde, drew a comparison between the mind of the physician and of the lawyer. The former, he said, believes in external and immutable truth, while the lawyer admits only an internal and variable truth, that is, psychologic truth. Accustomed to the relative truth of ideas, to controversial reasoning, the lawyer is ready to discuss and argue, while the physician, looking up to absolute and external truth, yields to facts, without discussing them. In commenting on this the *Semaine Médicale* states that submission to facts is not the essential feature of the scientific mind. The facts must be correlated, interpreted and correct deductions drawn. And herein is the weak point of the medical education of the day. Untrained in philosophic reasoning, physicians are often inclined to confound more or less hasty generalizations with the facts themselves, and blindly accept both. The history of medicine offers more than one example of this narrow and rigid dogmatism which builds up a whole creed on some simple theoretical conception that may or may not be based on correctly interpreted facts. Medical instruction is assuming more and more a strictly technical character. This is a mistake, for even in strictly professional matters it is easy to note how the mentality of the physician suffers from the lack of general culture. The time is past when encyclopedic knowledge is attainable by any one individual, but even making allowances for the unavoidable necessities of specialization, it is still true what Liard wrote fifteen years ago: "Specialization is becoming more and more of a necessity nowadays. It imposes the necessity for opening before the young mind—before the hour of the inevitable specialization—the whole broad field of science if the individual is to be anything more than a mere machine. The young mind realizes better the dignity of the special work which it takes up later if it comprehends the relation it bears to the whole and to general knowledge."

Beiträge zur Geb. und Gynäkologie, Hegar's, Leipsic.

XI, No. 3, pp. 357-524.

57 Changes in Retained Placentæ. M. Berlin.
58 Study of Amorphous Acardiac Monster. H. Hunziker.
59 *Vaginal Cesarean Section in Eclampsia, Placenta Prævia and Carcinoma of Gravid Uterus. O. Buttner.
60 *Results of Blood Count in Obstetrics and Gynecology. (Ergebnisse der Blutuntersuchung.) R. Blumenthal.
61 *Further Experiences with Pubiotomy. Ruppert.
62 Histologic Study of a Case of Obliteration of the Uterine Cavity by Steam Cauterization—Atmokausis. O. Beuttner.

XII, No. 1, pp. 1-154.

63 Is It Allowable to Use Forceps with High Face Presentation? (Darf man die Zange bei hohem Gesichtsstande anlegen?) O. von Herff.
64 Mechanism of Evolution of Circumvallate Placenta and Its Clinical Importance. Id.
65 Fate of Retained, Dead Ovum. (Pathologie der menschlichen Placenta. ii.) G. Schickele.
66 Diagrams Representing Bleeding, Pain and Age Curves of Gynecologic Affections. (Blutungs- Schmerz- und Altersbild der gynäkologischen Erkrankungen.) E. Scholl.
67 *New Method for Reviving Children Born Apparently Dead. (Wiederbelebung scheintotgeborener Kinder.) M. Ogata.
68 *The Infantile Uterus and Its Clinical Importance. (Zur Kenntnis des infantilen Uterus und zur Würdigung seiner klinischen Bedeutung.) K. Hegar.
69 Multiple Adenomyomata of the Uterus in Carcinomatous Degeneration. M. Schwab.
70 Gauze Sponge Making Its Way Into Bladder, Diagnosed with the Cystoscope and Removed. (In die Blase einwandernder Gazetupfer.) F. Kermauner.
71 Solitary Decidual Polyp at Normal End of Pregnancy. A. Mayer.

59. **Vaginal Cesarean Section.**—Büttner states that vaginal Cesarean section was performed at the Rostock gynecologic clinic five times on account of eclampsia, and twice on account of placenta prævia or cancer. In eclampsia, the simple technic, its great advantages and the absence of shock commend vaginal Cesarean section, especially when done early. Waiting too long seems to annul its effect. Expectant treatment in the clinic showed a mortality of 29 or 30 per cent., while with vaginal Cesarean section only one of the five women died. The operation was done in this case after the fifth convulsion, and sixteen other convulsions followed. He was much impressed with the advantages of this method of delivery in case of placenta prævia. Whether to incise the anterior or posterior wall or both is of minor importance, but drainage of the precervical space is essential. If this had been done in the case of placenta prævia he thinks the febrile course of the puerperium might have been averted. In every case in which there was no precervical drainage the patients left with the uterus in retroversion.

60. **Blood Count in Obstetrics and Gynecology.**—Blumenthal devotes nearly 100 pages to his comprehensive study of the blood during menstruation, in parturition, in the puerperium and in various gynecologic affections. He has determined a number of laws which, he thinks, regulate the composition of the blood in these various conditions, and present certain scientific, clinical and differential aspects. He states that the eosinophiles vanish from the blood and the proportion of hemoglobin declines as the general health suffers in inflammatory gynecologic affections. The appearance of myelocytes in the blood, in non-inflammatory gynecologic affections, is a sign of the severity of the affection. At the same time, he warns that the prognosis should not by any means be based unconditionally on the blood findings.

61. **Further Experiences with Pubiotomy.**—Ruppert reports eight more cases from Giessen, all with results favorable to the operation, although the serious complications in some cases show the inadvisability of attempting such an operation outside of a well-equipped clinic.

67. **Method for Reviving Children Born Apparently Dead.**—Ogata gives an illustrated description of his method of resuscitating children born asphyxiated. It has been used in his clinic and elsewhere in Japan during the last twelve years, with constantly increasing satisfaction. The rooms in the Japanese houses are too small to allow the Schultze swinging technic, and it is, besides, repugnant to the Japanese, as it is liable to scatter blood, mucus and meconium around. The infant is held in the left hand, its head and extremities hanging down, the abdomen and trunk curving upward. The right hand is held flat, the fingers close together, and the infant's heart region is struck light regular blows with the tips of the fingers, from ten to fifteen times a minute. This striking is a stimulus to the skin, but it also compresses the chest wall and lungs and thus induces expiration. As the fingers are raised, the elastic chest wall springs back to place, and this induces inspiration. The heart action is also stimulated and the circulation becomes more active. In case more energetic measures are required, he takes the ankles in the right hand and with the left hand under the back of the chest—the thumb and forefinger clasping the neck—without any pressure on the chest, the trunk of the child is slowly bent over until its face touches the top of the feet, or even a little farther. This movement presses the thorax and the abdominal cavity close together, pushing up the diaphragm. The lungs are squeezed together until there is strong expiration, while the rise of pressure inside the thorax stimulates the heart action and starts the column of blood in the aorta to moving. Any fluids in the air passages can readily run out of the mouth as the head hangs down. The infant is held a few seconds in this attitude, then the trunk is raised and forced back to the horizontal plane or beyond. The air rushes in as the air passages thus open and the diaphragm descends. After a few seconds the expiration movement is repeated, and so on, until natural respiration is established. In extreme cases, he takes away the left hand, holding the child only by the ankles with his right. As the trunk falls to the perpendicular the arms droop forward and the chest stretches and visibly protrudes, the traction from the pendent arms helping thus to induce deep inspiration. More blood flows to the medulla oblongata in this position, and this stimulates the respiratory center. From this position the child is brought back into the expiration position. These movements are repeated at rhythmic intervals, from eight to ten times a minute. To prevent chilling, the child is dipped into a warm bath about every minute. The duration and intensity of the procedures are regulated by the color of the skin, control of the limbs, spontaneous movements of the extremities, spontaneous efforts at breathing and the heart beat. A crackling sound during the inspiration movement sometimes accompanies the inflow of air into the lungs. As soon as spontaneous respiration is observed, the child is placed in a warm bath and watched. In favorable cases the respiration soon becomes more vigorous, the skin grows pink, twitching around the nose and mouth is observed, the limbs grow less limp and the head is held upright. If respiration remains weak and irregular, benefit is sometimes derived from pouring cold water over the chest in the warm bath. If this fails, the swinging movements must be resumed. The main factor in success is patience on the part of the physician. The resuscitated child must be supervised; many succumb to atelectasia and aspiration pneumonia. If there is rattling in the chest, suggesting the presence of aspirated fluids, these can be expelled by holding the child up by the feet and letting it swing slightly to and fro, when the fluids will run out of the mouth. Ogata adds that this technic stimulates respiration and circulation alike by simple measures without danger of injury to the little body.

68. **The Infantile Uterus.**—Hegar concludes his article with the statement that a long list of anomalies in shape, position and consistency of the uterus are due to congenital disturbances in development, especially persistence of infantile conditions. Chief among them are hypoplasia of the uterus, congenital and virginal prolapse, congenital excessively long cervix and the conical shape of the vaginal part with stenosis of the external os. These defects in development are manifested clinically by a number of disturbances: irregularities and pain in menstruation, injuries during coitus, vaginismus, sterility, abortion and various serious disturbances in childbirth from rigidity of the cervix. He cites a number of examples from the literature and from his own experience, demonstrating the evils of persisting infantile conditions. He remarks that infantilism seems to be taking the leading rôle now, in the place of gonorrhea, in inducing sterility. Even if conception occurs, habitual abortion is liable to follow. In favorable cases, however, under the stimulus of these processes the uterus is liable to develop into normal conditions, and normal pregnancy may follow. Delivery may be complicated by rigidity of the cervix, but utero-vaginal incision overcomes the effects of this.

Berliner klinische Wochenschrift.

November 4, XLIV, No. 44, pp. 1399-1432.

72 Spontaneous Mixed Tumors in Mice. P. Ehrlich and H. Apolant.
73 Unusual Form of Softening of the Bones. (Knochenerweichung.) G. Joachimsthal.
74 Dilute Acetic Acid for Differentiation of Transudates from Exudates. (Probe mit stark verdünnter Essigsäure—Probe von Rivalta.) W. Janowski.
75 *Joint Affections and Venereal Diseases. (Gelenkleiden auf der Basis von Geschlechtskrankheiten.) B. Bosse. (Commenced in No. 43.)
76 *Hitherto Disregarded Early Symptom of Ileus. (Frühsymptom des Ileus.) C. A. Ewald.
77 Results Attained by Milk Depots for Infants. (Säuglingsmilchküchen.) B. Salge.

75. **Joint Affections from Venereal Disease.**—Bosse emphasizes the necessity for distinguishing between venereal joint affections and rheumatic and tuberculous lesions. The main point is an early diagnosis which enables them to be successfully treated before irreparable changes have occurred. In gonorrheal joint affections, hyperemia by stasis is proving effectual. In neuropathic joint affections symptomatic measures are required as no radical cure is known. Unless differentiated early and treated, these metastatic joint affections from venereal disease, inherited or acquired, may entail osteoarthritic lesions with ankylosis as the final outcome.

76. **Early Sign of Ileus.**—Ewald calls attention anew to the remarkable way in which the stomach early fills with matter from the intestine in case of mechanical or paralytic occlusion of the intestines. Even before any other signs indicate obstruction of the bowels the stomach sound will aspirate fecal smelling stomach content. He makes a point of washing out the stomach on the slightest suspicion of ileus, and comments on the promptness with which the stomach fills up again with fecal matter after it has been evacuated with the sound. He has sometimes pumped out the stomach from six to ten times during the day, and each time found the organ full. The violence of the general symptoms abates after the stomach has been thus emptied, and the patient comes to operation in much better condition as the toxin-generating masses in the stomach are cleared out. On many occasions he has revealed, by this means, unsuspected ileus, when the local and general symptoms by no means indicated the seriousness of the condition.

Centralblatt für Chirurgie, Leipsic.

November 9, XXXIV, No. 45, pp. 1313-1344.

78 *Treatment of Fracture of the Fingers. (Fingerbrüchen.) P. Jottkowitz.

78. **Fracture of the Fingers.**—Jottkowitz refers in particular to fracture of the first phalanges. Instead of fastening the finger straight, he flexes the joints over a ball of cotton, having found that function is restored much better when the fracture heals with the hand nearly closed in the fist position. This causes over-correction, which soon rights itself later. The terminal phalanges are the only ones not flexed in this immobilization.

Centralblatt für Gynäkologie, Leipsic.

November 9, XXXI, No. 45, pp. 1401-1432.

79 Eversion of Tube with Tubal Abortion. E. Falk.
80 Experimental Research on Permanent Enlargement of Pelvis After Pubiotomy. (Beckenerweiterung nach Hebosteotomie.) G. Raineri.
81 Conception with Persisting Hymen. (Kohabitationshindernis infolge von Hymenal-Cyste und Vaginismus. Konzeption trotz fehlender Defloration.) Kuntzsch.
82 Simon's Spatula as Self-holding Speculum. (Simonscher Spatel als selbsthaltendes Spekulum.) A. L. Scherbak.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena.

July 22, X, No. 13, pp. 481-528.

83 *Rôle of Parathyroids in Pathology. (Rolle der Epithelkörperchen.) K. H. Schirmer. Collective Review. Commenced in No. 11.

October 1, No. 18, pp. 689-720.

84 Achondroplasia—Fetal Rickets. (Chondrodystrophia fœtalis. Mikromelie.) Id. Collective Review Commenced in No. 16.

October 26, No. 20, pp. 769-809.

85 *Cystinuria. K. von Hofmann. Collective Review. Commenced in No. 19.

83. **Importance of the Parathyroids in Pathology.**—Schirmer reviews 187 articles that have appeared on the parathyroids. The logical conclusions, he remarks, from the assumption of an internal secretion and toxin-neutralizing function on the part of the parathyroids—which seems to be established by the data cited—are to treat conditions due to defective functioning of these glands by specific antitoxic or opotherapy. Favorable results have been reported from emulsions, etc., of the parathyroids, in experimental research or in the clinic by Gley and Vassale, Halsted, Biedl, Berkeley, Zagnfrognini, Michelazzi, Loewenthal, Wiebrecht and Marinesco. Schirmer adds that we have only just begun to study the question of the rôle of the parathyroids in pathology and the possibilities of treatment. Histologic study of the internal secretion is needed and determination of the minimal amount of parathyroid tissue necessary to maintain the normal balance. The rôle of the parathyroids in postoperative tetany seems to be established now beyond question, but it is still dubious in regard to other forms of tetany, eclampsia and myxedema. The greatest problem in the parathyroid treatment is whether it should be antitoxic or an organotherapy. He adds that no one seems to have tried the action of the Roentgen rays on the parathyroids, and yet, from analogy with the thyroid, there seems to be a prospect of success in this line. Kienböck reported recently a case of Roentgen treatment of goiter in which symptoms of thyroidism developed after the goiter had shrunk under the influence of the exposures.

85. **Cystinuria.**—Hofmann has collected 175 cases of cystinuria on record. The patients were males in 85 and females in 45 of the cases in which the sex was mentioned, and the majority were young. As cystin is so hard to dissolve, stones form readily in bladder and kidneys. Cantani advises a strict meat diet in such cases, but others have derived no benefit from this attempt to form more soluble compounds with the cystin. Beale administered large doses of ammonium carbonate (3.5 gm. a day) and reports slight improvement. A family tendency seems to be unmistakable in many of the cases of cystinuria on record.

Deutsche medizinische Wochenschrift, Berlin.

November 7, XXXIII, No. 45, pp. 1849-1888.

86 *Technic of Operative Treatment of Perforation of Gastric Ulcer. (Perforiertes Magengeschwür.) M. Martens.
87 Ocular Affection from Lead Poisoning. (Bleivergiftung mit Augenerkrankung.) Wirsing.
88 Case of Traumatic Cirrhosis of Liver. (Lebercirrhose.) A. Alexander.
89 Bilateral Rupture of Quadriceps Tendon Close to Upper Margin of Patella. R. Haecker.
90 *Supersensitiveness of the Skin in Gynecologic Affections. (Hyperalgesien der Haut in ihrer Bedeutung für die Gynäkologie.) P. Alsberg.
91 Are Modern Silver Preparations Free from Caustic Action? (Moderne Silberpräparate.) G. Frickenhaus.
92 *Acute Methemoglobinemia from Poisoning by Sesame Oil Enema. (Akute Vergiftung nach Oelklystieren.) P. Buttersack.

86. **Operative Treatment of Perforated Gastric Ulcer.**—Martens remarks that when patients thank him for having saved their lives by some operation he always tells them that they should not thank him but direct their gratitude to the physician who diagnosed the condition and sent the patient to him in time for operative treatment to be effectual. He states that between 1857 and 1885 only 25 cases of perforation of a gastric ulcer were encountered among the numerous patients at the Berlin Charité, and none was saved. Mikuliez was the first to attempt operative treatment in such cases, in 1880, and Heussner in 1892 was the first to operate successfully. Martens has operated in 10 cases and 6 of the patients were restored to health. All his patients were sent to the hospital with a diagnosis of appendicitis and peritonitis. In one case the leucocytes numbered 23,600 in less than three hours after the perforation; in others, 30,000 in four hours, 12,500 in less than five hours, 20,000 after twenty-six hours and 16,000 after fourteen hours, and all these patients recovered. The longer the interval since the perforation, the lower the number of leucocytes. In one case, after an interval of forty hours, the leucocytes numbered only 3,400. Hyperleucocytosis does not occur in hysteria, and its absence may thus differentiate the latter. In conclusion Martens describes his technic: He always sutures the perforation over and over, and tampons above an interposed, fastened piece of omentum. He has never regarded a gastroenterostomy or jejunostomy as indicated in his cases; he flushes the abdominal cavity copiously, raising and lowering the foot of the table, and irrigating until the water comes away clear. He drains with one tube wrapped in gauze, concludes with abundant saline infusion, and advises that every

patient with gastric ulcer should be instructed in regard to the danger of perforation and the necessity for immediate operation. Some of his patients had never presented symptoms on the part of the stomach, or they were so slight as to be disregarded. In one case he found the abdominal cavity full of gas, pus and castor oil, and in another case a high rectal injection had done much harm after perforation of a diverticulum. He warns that the public should be educated to pay more attention to abdominal pain and to refrain from castor oil and enemas, morphin and opium which mask or aggravate conditions.

90. **Supersensitiveness of the Skin in Gynecologic Affections.**—Alsberg writes from Landau's clinic to report the findings in seventeen women who presented cutaneous areas of hyperalgesia. These were all that were discovered among 200 women with gynecologic affections examined for the purpose. Ten of the women were unmistakably hysterical, and he declares that the finding of a supersensitive area requires close study of its nature and the condition of the nerves, for differentiation of hysteria. In non-hysterical patients the supersensitive areas were so capricious and irregular that no diagnostic importance could be attached to them. This experience contradicts Head's assertions in regard to the diagnostic value of zones of hyperalgesia, at least so far as gynecology is concerned, although their discovery may be an interesting by-finding even if void of diagnostic import to date.

92. **Acute Poisoning from Injection of Sesame Oil.**—Buttersack was called to a patient presenting symptoms of severe, acute methemoglobinemia four hours after a rectal injection of 250 c.c. of sesame oil. The patient was a woman of 32 who suffered occasionally from gallstone colic and had been in the habit of taking these sesame oil injections without by-effects on other occasions. The symptoms reached their height about the seventh hour and then gradually subsided to the end of the thirty-sixth hour. The cerebral symptoms, reactionless pupils, apathy, absence of abdominal pain and the relaxed abdominal walls and clonic contractions spoke for poisoning while the disproportion between pulse and respiration suggested some change in the blood as cause for the intense cyanosis. The pulse rate was 130, the respiration between 24 and 32. No drugs had been taken internally during the last day or so, but Buttersack remembered a case of intoxication from oil, reported by Rautenberg, in which similar symptoms had been observed. The peculiar bluish-purplish tint of the skin and the chocolate to sepia-colored blood confirmed the diagnosis of methemoglobinemia. Copious irrigation of the intestines removed the oil left in the intestines, and inhalation of oxygen proved effectual in inducing a change for the better. The heart was apparently suffering from an insufficient blood supply, but recovered under heart tonics, especially strophanthin. The cerebral symptoms gradually subsided spontaneously, and diuresis was promoted by enemas of chamomile tea; the stomach at first rebelled against ingestion of anything by mouth. The intoxication was evidently due to impurities in the oil.

Deutsche Zeitschrift für Chirurgie, Leipsic.

September, XC, Nos. 1-3, pp. 1-288.

93 Advantages and Dangers of Preliminary Ligation of the Carotid Artery Before Resection of Upper Jaw. (Oberkieferresektion vorausgeschickte Carotisunterbindung.) Wieting.
94 Basal Cephalocele. (Basale Cephalocelen.) A. Exner.
95 *Operative Treatment of Cancer of Larynx. (Kehlkopfkrebs.) N. Wolkowitsch.
96 Callus Cysts. (Calluscysten.) P. Francenheim.
97 *Primary Sarcoma of Stomach with Cystic Metastasis in Liver. (Primäres Magensarkom mit cystischen Lebermetastasen.) P. H. Hosch.
98 Extreme Talipes Equinus Resulting from Antero-External Luxation of the Astragalus. (Talusluxationen. Frakturen des Sustentaculum tali.) A. Kirchner.
99 *Treatment of Fractures of Humerus Above the Condyle. Knoke.
100 Consequences of Occlusion of Mesenteric Arteries. (Folgen des Verschlusses der Gekrösarterien.) Marek.
101 Treatment of Facial Paralysis by Nerve Grafting. (Behandlung der Facialislähmung durch Nervpropfung.) H. Ito and Y. Soyesima.
102 Novocain in Spinal Anesthesia. (Novokain als Lumbalanästhetikum.) O. Fuster.
103 Laceration of Vessels of Popliteal Space. (Zerreissung der Kniekehlengefässe.) P. Graf.
104 Transplantation of Bone in Extensive Defects in Long Bones. (Knochentransplantation bei ausgedehntem Kontinuitätsdefekt der langen Röhrenknochen). O. Tomita.
105 Case of Exophthalmic Goiter with Tuberculous Process in One Parathyroid Gland. E. Stumme.
106 Descent of Right Ureter into Scrotum, Simulating Inguinoscrotal Hernia. F. Brunner.

95. **Laryngeal Cancer.**—Wolkowitsch remarks that the diagnosis is the main thing in case of cancer of the larynx. This condition should be suspected whenever an elderly, previously healthy person shows signs of unexplainable throat trouble, especially hoarseness. He reports the details of operative treatment in 24 cases and states that 7 of the patients are still in good health from one to eight years after removal of the growth. Three succumbed during the total removal of the larynx, one from sepsis; 7 have died since from intercurrent affections; 5 patients have returned with recurrence, one after two years of health. The after-history of one patient could not be learned. In one case an otherwise healthy man of 43 had a chronic catarrhal laryngitis with polypoid thickening of the walls. He derived great relief from applications of nitrate of silver, and although warned against their too constant use, he continued to use the remedy almost continuously for five years, when a cancerous ulceration developed. Wolkowitsch has found that persons bearing the germs of tuberculosis seem particularly exposed to malignant disease. He warns that iodid treatment is liable to induce a temporary improvement in a cancerous process, which may mask the diagnosis. Interference with the movements of the vocal cords is an early symptom. Positive microscopic findings are decisive, but it is sometimes difficult to obtain differentiating material. The glands were involved in only 8 of the 24 cases. All but 5 of the patients were men, and nearly all were smokers. He gives the particulars of his technic and summaries of the histories.

97. **Primary Sarcoma of the Stomach.**—Hosch has found eighty cases on record or from his own experience, and gives brief summaries of each case, with the detailed report of a case complicated by cystic metastasis in the liver. He appends summaries of a number of cases resembling the last mentioned with 118 bibliographic references.

99. **Treatment of Fracture of Humerus Above the Condyle.**—Knoke gives an illustrated description of a portable splint and dressing which allows extension. He describes fifteen cases treated in which it was applied in treatment with most excellent results.

Münchener medizinische Wochenschrift.

November 5, LIV, No. 45, pp. 2217-2264.

107 *Enzyme from Cultures of *B. Pyocyaneus*—Pyocyanase—in Prevention and Treatment of Certain Infectious Diseases. (Pyozyanase bei bestimmten Infektionskrankheiten.) R. Emmerich (Munich).
108 Influenza Sepsis and Experimental Influenza Bacillus Septicemia. Saathoff.
109 Hypertrophy of Langerhans' Islands in Pancreas in Experimental Phloridzin Glycosuria. P. Lazarus.
110 *Artificial Feeding of Infants. (Künstliche Säuglingsernährung.) E. Moro.
111 Tests of Viscosity of Blood. (Viskosität des Blutes.) W. Hess.
112 *Danger of Drowning for Expert Swimmers. (Ertrinkungsgefahr und Schwimmkunst.) Revenstorf.
113 Treatment of Chronic Empyema of Maxillary Sinus. (Chronischer Kieferhöhlenempyem.) G. Frey.
114 *Orthostatic Albuminuria in Nephritis. H. Engel.
115 Genesis of Albuminuria. F. Schmidt.
116 Tardy Operation in Appendicitis. E. Mensel.

107. **Enzyme from Cultures of B. Pyocyaneus in Infectious Diseases.**—The JOURNAL has previously mentioned Emmerich's claims in regard to the prophylactic and curative action of a substance derived from *B. pyocyaneus* in treatment of various infectious diseases, and in this article he relates further experiences with it. A thick bacterial film forms over the top of fluid cultures of the *B. pyocyaneus* and on shaking the dish this film sinks to the bottom and a new one gradually forms. The film forms again six or seven times when the culture is thus shaken at intervals of three or four days. By the end of the third week the proliferation of the bacteria in the culture medium has entirely ceased. This arrest of the growth of the bacteria can not be due to lack of nourishing elements in the culture medium nor to the products of the metabolism of the bacteria, for reasons which he enumerates. The film as it sinks to the bottom of the dish forms a thick mass, but it speedily disintegrates and disappears. The complete dissolution of such a large mass can be the result only of some powerful bacteria-disintegrating enzyme contained in the bodies of the bacteria. It is evidently an insoluble zymogen and passes

into the culture fluid as a soluble enzyme when the bacteria die. The bacteriolytic enzyme thus forming in the culture fluid can be obtained in a pure and concentrated form by passing three weeks' old cultures of *B. pyocyaneus* through a Berkefeld filter and reducing to one-tenth the volume in a vacuum. The substance thus derived—to which he has given the name of pyocyanase—not only dissolves the bodies of the bacilli but also various other bacteria, especially those of diphtheria, cholera, typhoid, plague and anthrax, and streptococci, staphylococci and gonococci, killing and dissolving large amounts of these micro-organisms in a very short time. The tubercle and hay bacilli are not affected by the pyocyanase, probably owing to their resistant capsule. This remarkable bactericidal action of pyocyanase has been utilized in therapeutics, and Escherich, Pfaundler, Jehle and others have obtained results in diphtheria and other infectious diseases which seem to justify the assumption that pyocyanase is destined to play an important part in the causal treatment of these diseases. Guinea-pigs injected with a fatal dose of diphtheria toxin recover after a subcutaneous injection of pyocyanase. It seems to bind the diphtheria toxin and also dissolves diphtheric false membrane. In the reagent glass 3 c.c. of the solution of pyocyanase will completely dissolve 3 gm. of blood fibrin in four hours. Pyocyanase destroys enormous quantities of diphtheria bacilli in a remarkably short time, and also kills and dissolves any pus cocci that may be present. It has still another important property, namely, the favoring of restitution of the mucosa, probably due to a chemotactic action. In treatment of diphtheria Emmerich insufflates 3 or 4 c.c. of pyocyanase into the throat through a hand atomizer operated by blowing into the connecting tube. The spraying is repeated four times at a sitting, with intervals of from five to ten minutes, to allow the pyocyanase to act on the bacteria and membrane in the throat. The diphtheric process is arrested at once and rapidly retrogresses, the promptness depending on the energy with which the throat is sprayed. He has thus cured thirty-two patients with diphtheria, and other observers report similar favorable results even without the aid of diphtheria antitoxin. Zucker's report of 35 cases emphasizes the rapid disappearance of the fetor, the subsidence of the fever and the dissolving away of the false membrane. Emmerich's article is to be continued; the second part is to contain detailed reports of some of the severer cases, especially those with pus cocci complications. He adds in conclusion that omission to use pyocyanase now in diphtheria—always in connection with antitoxin treatment—seems to him as criminal as omission of antiseptic measures in case of infected wounds and threatening sepsis..

110. **Successful Artificial Feeding of Infants.**—Moro announces that very young guinea-pigs and rabbits invariably died in his experiments when fed with milk from another species. They presented symptoms closely resembling those of infantile atrophy and cholera infantum. It was found, however, that if the animals were given vegetables the symptoms were warded off. The surprisingly favorable effect of the vegetable diet on the animals induced him to try a pod vegetable soup for infants with acute alimentary disturbances like those observed in the animals, and the results were equally good. It was found that 80 per cent. of the animals soon died when they were never allowed to suckle, while only 30 per cent. died of those allowed to suckle one day, and only 10 per cent. of those allowed to suckle three days. From these and other facts related, Moro emphasizes the vital importance of breast milk during the first weeks of an infant's life. Once past these first weeks, the difficulties of artificial feeding grow rapidly less. Even a single week of breast milk may tide the infant past the danger point, after which artificial feeding can be successfully inaugurated.

112. **Cause of Sudden Drowning of Swimmers.**—Revenstorf discusses the sudden drowning, even of good swimmers, of which so many examples are recorded. When to the pressure of the water on the lungs and the great muscular effort required in swimming, there is superadded distension of the stomach from food, fluids and gases, especially after a meal, the diaphragm is greatly hindered in its movements, and it is no wonder that even expert swimmers get out of breath sometimes and drown. The fact that they are so much at home in the water leads them to start swimming with vigorous strokes requiring great muscular effort. As they lose their breath they are unable to cry for help, and the accident occurs before the witnesses realize that anything is wrong. Even without the distension of the stomach, other factors may induce such exhaustion that the swimmer is unable to continue breathing. Water animals have exceptionally large and powerful diaphragms.

114. **Orthostatic Albuminuria.**—Engel ascribes orthostatic albuminuria to an existing nephritis, but states that the nephritis in such cases has a more favorable prognosis than under other conditions, as the cells of the kidney recuperate when the patient lies down. The main point in these cases is not the albuminuria while the patient stands, but the absence of albuminuria when he reclines. It testifies to the recuperative power of the kidney cells, which leads to complete recovery if favored by climatic and therapeutic influences.

Virchow's Archiv, Berlin.

October, CXC, No. 1, pp. 1-176.

117 Simultaneous Appearance of Acromegalia and Syringomyelia. K. Petren.
118 Partial Duplication of Esophagus. (Partielle Verdoppelung der Speiseröhre.) H. Kathe.
119 *Clinical and Experimental Study of Intoxication from Potassium Chlorate. (Kali-chloricum Vergiftung.) B. Winogradow.
120 Changes with Age of Ganglion Cells in the Brain. (Altersveränderungen der Ganglienzellen im Gehirn.) Y. Saigo.
121 Rôle of the Granule of the Cell in Hematogenic Pigmentation: "Inflammatory" Cell Forms. (Rolle der Zeligranula bei hämatogenen Pigmentierung.) J. Arnold.
122 Secondary Changes in the Bronchi and Study of Metaplasia. (Sekundare Veränderungen der Bronchien.) S. Kitamura.

119. **Fat Embolism in Intoxication from Potassium Chlorate.**—Winogradow refers to 100 cases of intoxication from potassium chlorate collected by Romanow in 1896, and states that more than eight have been observed in Russia. Romanow discovered evidences of fat embolism, predominantly in the lungs, in one case, and his further research seemed to show that the fat proceeded from the bone marrow. Winogradow has had occasion to observe five cases, only one terminating in the recovery of the patient. The chlorate was taken with suicidal intent in all. Vomiting followed in from twenty to thirty minutes, soon followed by collapse, loss of consciousness and a bluish-gray tint of the skin and mucous membranes. This tint is so peculiar and differs so much from ordinary cyanosis, that from it alone, he states, the intoxication can be diagnosed. It is not usually accompanied by dyspnea, but there is great weakness, vertigo and pain in the stomach region. The pulse was fast, small and weak, about 130, with respiration about 29; of the Cheyne-Stokes' type in one case. The urine was clear, abundant and free from albumin and sugar, but later assumed a chocolate color. Profuse diarrhea is the rule by the end of the first day. By the seventh day the symptoms begin to subside, the patients feel better and seem on the road to recovery, although vomiting and nausea may persist. Suddenly the patient screams, clutches the breast, tosses uneasily around and seems to be suffocating. The dyspnea and cyanosis continue for an hour or so, when death ensues. In two cases this was on the tenth, in one on the thirteenth, and in another on the thirty-second day after the first symptoms. The fifth patient's urine became clear again by the eighth day, and the digestive disturbances rapidly retrogressed. This patient was discharged in good health. Treatment consisted of lavage of stomach and intestines, castor oil, saline infusion, warm baths, dry cupping to the kidneys and strict milk diet. No acids should be given on account of the reduced alkalinity of the blood (Mering). Autopsy and extensive experiments on animals confirmed the assumption in regard to the fat embolism which is induced by intoxication with potassium chlorate. It occurs constantly and the bone marrow is seen to be red instead of its normal tint, while the microscope reveals that it consists almost entirely of lymphoid elements. The droplets of fat pass through the veins to the lungs, and are distributed thence to all the other organs. They were found most frequently in the liver, kidneys and heart. The appearance of the fat embolism in the cats and dogs experimented on was especially interesting, as these animals normally eliminate fat through the kidneys.

Hygiea, Stockholm.

LXIX, No. 2, pp. 113-224.

123 *Influence of Physiologic Elements of the Body on the Heart and Circulation. (Om några fysiologiska kroppsbeståndsdelars inflytande på hjärtat och cirkulation.) C. G. Santesson.

124 Two Cases of Vaginal Cysts. (Cystor i vagina.) A. T. Högström.

No. 3, pp. 225-352.

125 *Experiences with Gastric Ulcer. (Mine operationer mot ventrikelsvulster, 1887-1906.) J. Berg.

126 Pathogenesis of Mercurial Colitis and Stomatitis. J. Almqvist.

No. 4, pp. 353-432.

127 *Bactericidal Action of Tears. (Tårvätskans bakteriedödande verkan.) C. Lindahl.

128 *Indications for Operative Treatment of Gastric Ulcer. A. Reuterskjiöld.

No. 5, pp. 433-544.

129 Two Cases of Localized Tumor in Spinal Cord; Diagnosis. (Ryggmärgstumörer.) H. Köster.

130 Case of Giant-Celled, Fibrosarcomatous Elephantiasis of the Endometrium. J. Fellander.

131 Two Cases of Congenital Ophthalmoplegia. K. Stålberg.

132 Medical Inspection of Minors Working in Industrial Establishments. (Minderåriga arbetare, sysselsatta i industriellt yrke.) A. Lagerman.

No. 6, pp. 545-654.

133 *Abnormal Course of Renal Blood Vessels in Pathogenesis of Hydronephrosis. (Anormala njurkärlen kunna hafva en afgörande betydelse för uppkomsten af hydronefros.) G. Ekehorn.

123. **Influence of Physiologic Elements of Body on Heart and Circulation.**—Santesson has been conducting research along the lines of that reported by E. L. Backman on the isolated, surviving heart of rabbits.

125. **Experiences with Operative Treatment of Gastric Cancer.**—Berg tabulates the details and end results of operative treatment of 225 patients with malignant disease of the stomach since 1887. Four succumbed after the exploratory laparotomy undertaken in 47 cases, but the preceding conditions were evidently responsible for the fatality. In his series of 79 cases in which resection was done, 1887-1906, the mortality was 22.8 per cent., while it was only 14.5 per cent. among the 62 patients operated on since 1896. This is the lowest percentage of fatalities among thirteen European clinics before 1902 and 1904 as he shows by statistics. His mortality after gastroenterostomy was 21.3 per cent. of 103 patients, 1887-1906, and 19 per cent. of 84 patients, 1896-1906. He urges exploratory laparotomy on the slightest suspicion of cancer—the patient does not mind the unnecessary operation in case of the good news of negative findings. One of the male patients is in good health nearly ten years after resection of the stomach, and another, a woman, was in the best of health when examined in 1904, nearly six years after resection. Palliative gastroenterostomy allowed survival only for about three months on an average, while palliative resection allowed an average survival of fourteen months.

127. **Bactericidal Action of Tears.**—Lindahl's experiments showed considerable bactericidal action on streptococci, but the action on pneumococci was dubious. He ascribes the bactericidal power to enzymes in the secretion of the lachrymal glands, his tests showing that it was not the work of the salts in the tears.

128. **Indications for Operative Treatment of Gastric Ulcer.**—Reuterskjiöld states that 61 per cent. were cured and 24 per cent. immeasurably improved of all patients who have submitted to operative treatment for gastric ulcer. The pain and vomiting vanish at once and the general condition begins to improve. The danger of hemorrhage and perforation is averted and the chances of cancerous degeneration are materially reduced. He regards recurring hemorrhage as an indication for operative treatment.

133. **Abnormal Renal Vessels Cause of Hydronephrosis.**—Ekehorn gives an illustrated description of a case in which hydronephrosis was evidently induced by an accessory artery which passed from the aorta behind the ureter to the anterior surface of the kidney. He is convinced that accessory vessels of this kind may be responsible for many cases of hydronephrosis and has collected twenty-four cases from the literature which sustain this assumption. He summarizes them, with illustrations of the findings in some instances. His patient was a woman of 43 who had presented intermittent hydronephrosis for six years, the pains suggesting stone colic. The pains had been exceptionally severe during an attack after a pregnancy two years before. The urine was aseptic and physiologic, and the bladder was normal; the kidney was somewhat enlarged. When the kidney was exposed the supernumerary artery was discovered and severed between ligatures. The operation freed the patient at once from all disturbances.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

OPHTHALMIA NEONATORUM. By Sydney Stephenson, M.B., C.M., Ophthalmic surgeon to Queen Charlotte's Hospital, London. Cloth. Pp. 258. London: George Pulman & Sons, Ltd., 1907.

REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY FOR SEPTEMBER, 1907. Paper. Pp. 155. Trenton, N. J.: The John L. Murphy Publishing Co., 1907.

THE CONQUEST OF CANCER. By C. W. Saleeby, M.D., F.R.S., Author of Worry. Cloth. Pp. 361. Price, $1.75. New York: F. A. Stokes Co., 1907.

MOSQUITO LIFE. By Evelyn G. Mitchell, A.B., M.S. Cloth. Pp. 281. Price $2.25. New York: G. P. Putnam's Sons, 1907.

NEW PATENTS.

Patents recently granted of interest to physicians:

869128. Crutch. Wm. Autenrieth, Cincinnati.
868971. Pad for trusses. John M. Cullis, Yonkers, N. Y.
869094. Producing sulfuric acid. Isidor Kitsee, Philadelphia, Pa.
869001. Sanitary apparatus. Gustave A. Lucas, Levallois-Perret, France.
869203. Truss. Samuel H. Sublett, Hatton, Ark.
869114. Massive boron carbid and making same. Samuel A. Tucker, New York.
869344. Invalid bed. John D. Birmingham, Wilkes-Barre, Pa.
869784. Infants' binder. Ann Jarrett, Davis Grove, Pa.
869371. Food product. John H. Kellogg, Battle Creek, Mich.
869439. Mouth speculum. John F. Koehler, Chicago, Ill.
869591. Preparing metallic powders. Wm. F. McNulty, Allegheny, Pa.
869793. Sputum cup. Christian W. Meinecke, Jersey City, N. J.
869515. Sputum cup. Harry J. Potter, Cambridge, Mass.
869262. Aspirator. Edwin Pynchon, Chicago, Ill.
869333. Bottle rinser and sterilizer. David E. Shaw, Milwaukee, Wis.
869668. Pyrometer. Charles B. Thwing, Philadelphia, Pa.
869610. Carbonic acid bath. Alfred Zucker, Dresden, Germany.
870074. Apparatus for the production of vibrations. John Astrom, Milwaukee, Wis.
870226. Bust reducer and supporter. Olive D. Cornell, New York, N. Y.
870087. Combined measuring glass and pestle and mortar. Arthur W. M. Dickins, Bromley, England.
870021. Nasal snare. Thomas E. Duffee, Winchendon, Mass.
869890. Portable rotary bathing and massaging machine. Charles F. Faupel, Chicago, Ill.
869966. Compressing and purifying air. Willard O. Felt, New York, N. Y.
870506. Instrument for determining the position of an organ or the like within human bodies. Joseph Gillet, Schoneberg, near Berlin, Germany.
870167. Air-inspirator. John Helmlich, Port Clinton, Ohio.
870519. Truss. Ferdinand C. D. McKay, Willseyville, N. Y.
869978. Pasteurizing apparatus. Edward J. Miller, Canton, Ohio.
870324. Operating table. Bernard D. Thorner, New York, N. Y.
870262. Therapeutic lamp. Julius B. Wantz, Chicago, Ill.
870400. Crutch. Alvin D. Wick, Topeka, Kans.
870004. Throat protector. Charles E. Winks, Winnipeg, Manitoba, Canada.
870927. Electrotherapeutic instrument. Benjamin Y. Boyd, Chicago.
870676. Crutch. Edward E. Hayden, Washington, D. C.
871089. Druggist prescription file. Isaac Hotaling and W. A. Jacobs, Albany, N. Y.
870829. Manufacture of camphene. Fritz Koch, London, England.
870984. Bed-pan. Christian W. Meinecke, Jersey City, and D. Hogan, Hoboken, N. J.
870746. Making sodium sulfate. John D. Pennock, Syracuse, N. Y.
870841. Pasteurizing apparatus. Leroy S. Pfouts, Canton, Ohio.
871666. Valve for sterilizers. Samuel Bingham, Rochester, N. Y.
871474. Syringe. Wm. T. Buckner, Shelbyville, Ky.
871479. Electrogenic body device. Albert R. Cooper, Findlay, Ohio.
871121. Massage implement. Ferdinand E. D'Humy, Englewood, N. J.
871213. Suspensory. Max Eckmann, Blue Island, Ill.
871261. Press for molding suppositories, etc. Hubert Endemann, Vienna, Austria-Hungary.
871579. Atomizer. Wm. J. English, Cohoes, N. Y.
871495. Making mercury salves and ointments. Franz Fuhrmann, Berlin, Germany.
871689. Surgical appliance. Philip Ganzhorn, Chicago, Ill.
871612. Sterilizing tablet. Vincent B. Nesfield, Earling, London, England.
871194. Humidity reducing apparatus. Richard H. Thomas, Chicago.
871542. Hemoglobinometer. Robert L. Watkins, New York, N. Y.